THE ECOLOGICAL COVENANT APPROACH TO INTERNATIONAL BIODIVERSITY REGIMES: TRANSFORMATIVE ASPECTS OF GLOBAL GOVERNANCE FOR SUSTAINABILITY

by

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ABSTRACT

Fear of losing their own biological resources has attracted states' attention to secure their biological property. Territorial sovereignty related to private property doctrine is unquestionable as the privilege to nation-states to protect their integral boundaries. Nevertheless, sovereignty alone cannot ensure the safety of citizens from global environmental harms or prevent the impact of the erosion of territorial biodiversity from various outside factors. For the forty years since 1972, the result of these factors has caused cleavage in global biodiversity governance between North and South nations. However, the new dialogue of the existing biodiversity legal regimes based on neo-liberalism has emerged in consistency with globalization and free trade for the enclosure of the earth's biodiversity commons into a few groups. Under this construction, nation-states have cooperated and established biodiversity institutions to secure their interests. Rules and policies have been set and guaranteed by the contractual agreement. In order to gain an agreed consent, the contractual convention needs to maximize exclusive rights, and minimizes common (but differentiated) responsibilities. Thus, state's cooperation as to a spirit of global partnership to protect the integrity of the earth's ecosystem is difficult to be achieved.

In the today's Anthropocene era, humanity's activities have made significant impact to the biosphere system in both local and global levels. As a part of the earth life-supporting system, biodiversity sustains resilient ecosystems that maintain human communities. Biodiversity as a fundamental element of all life forms and humans supports the biosphere. This is distinct from natural resources. Regarding biosphere collapse, it is our human activities that have emerged as a major force. It is our activities that have and continue to have a significant impact on the operation of the biosphere. Thus, the conceptual framework reconnecting human development and activities to the biosphere has brought a call to address this impending crisis. Reconciling human community with the biotic community requires a new shift from the anthropocentric paradigm to the eco-centric paradigm at the local and global scale. To avoid the tragedy of the mismanagement of the earth commons, transformative aspects of global governance for sustainability is necessary to be reconsidered. Instead of focusing on individual interests, governing the earth commons must be based on the common heritage doctrine within ecological limitation and resilience. The call for a commitment to reconnecting relationship between humans and the earth's community is attainable, only if mutual restraint is agreed upon and put towards practices.

Therefore, in this thesis, notion of the ecological covenant aims to capture legal and virtuous ethics as agreement which are beyond the notion of the social contract and compact. It is believed that the approach might create a new version for the environmentally constitutional agreement to join the global citizens together in a way forward to achieve global sustainability.

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LIST OF ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
BFMs	Biodiversity Financing Mechanisms
CBD	Convention on Biological Diversity
CBDR	Common but Differentiated Responsibilities
CCH	Common Concern of Humankind
CHM	Common Heritage of Mankind
CITES	Convention on International Trade in Endangered Species
CMS	Convention on the Conservation of Migratory Species of Wild Animals
EI	Ecological Integrity
FTA	Free Trade Agreement
LULUCF	Land Use, Land-Use Change and Forestry
LMOs	Living Modified Organisms
ICRW	International Convention for Regulation of Whaling
ICJ	International Court of Justice
ILC	International Law Commission
IUCN	International Union for Conservation of Nature
ITPGFA	International Treaty on Plant Genetic Resources for Food and Agriculture
IPPC	International Plant Protection Convention
IU	International Undertaking on Plant Genetic Resources
MA	Millennium Ecosystem Assessment
MEAs	Multilateral Environmental Agreements
NGOs	Non-Government Organizations
PSNRs	Permanent Sovereignty over Natural Resources
GHGs	Green House Gases
GEG	Global Environmental Governance
GGHE	Global Governance for Human and Environment
GG	Global Governance
GMOs	Genetic Modified Organisms
PES	Payment for Ecosystem Services
RMA	Resource Management Act, 1991
REDD	Reducing Emissions from Deforestation and Degradation
SD	Sustainable Development
TEEB	Economics of Ecosystems and Biodiversity
TRIPs	Trade-Related Aspects of Intellectual Property Rights
TPPA	Trans-Pacific Partnership Agreement
The Ramsar	Convention on Wetlands of International Importance
UDNR	Universal Declaration of Human Rights
UNGA	United Nations General Assembly
UNCLOS	United Nations Convention of the Law of the Sea
UNCED	United Nations Conference on Environment and Development
UNSECO	Convention Concerning the Protection of the World Cultural and Natural Heritage
UNCCD	Convention to Combat Desertification
UNFCC	United Nations Framework on Climate Change
UNEP	United Nations Environment Programme
WCED	World Commission on Environment and Development
WEO	World Environmental Organization
WEC	World Environmental Constitution
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
VCLT	Vienna Convention on the Law of Treaties

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THESIS's INTRODUCTION

1. Introduction

The thesis addresses an essential issue of biodiversity protection in the biosphere beyond the political boundary. Biodiversity in this thesis is viewed as a connection of life and a variety of species. Their significant roles support all life and humans, so biodiversity depletion will cease life to exist. Over the past decades, the concept of "biodiversity corridors and connectivity"[1] has been created to resolve the problem of habitat loss and fragmentation. Its recognition can be found in international agreements related to biodiversity such as the UNESCO biosphere reserves since 1974, the Migratory Species Convention, and the Biodiversity Convention.[2] However, the conceptual problem of territorial sovereignty is undeniably the greatest obstacle that makes it the most difficult to achieve protecting the earth's biodiversity.

The main point of this work addresses the traditional Westphalian statehood system, neoliberal consumerism, market globalization under the anthropocentric paradigm of biodiversity related environmental treaties, and unsustainable practices of nation states that have contributed to the rapid loss of biodiversity and earth's ecosystem destruction at local and global levels. Based on the concept of an ecological covenant approach and governance, the thesis proposes a paradigmatic shift to biodiversity protection.

This introductory chapter provides an overview of insights of the decline of earth biodiversity in detail and investigates the ways in which biodiversity losses are related to human health and wellbeing. It points out the key threats that are currently driving the further destruction, such as those involving state's practices related to their economic development. Then such consequences of continuing acts may cause the collapse of the biosphere system that may cause harm, misuse and be detrimental to our next generations. Based on the study of the planetary boundaries, the Chapter moves onto a discussion of the definition of biodiversity beyond the character of the object, as it is a part of the earth's life-supporting system. Because biodiversity is essential for sustaining the biosphere system, its' meaning should not be limited under the scope of commodity or thing by which it is specified or narrowed to human interests alone. Both physical and functional elements of biodiversity interdependence will be further explained in terms of biodiversity and its complexity. The instrumental and intrinsic value of biodiversity will be discussed in this section. Under the scope of the international environmental law, the thesis focuses on two groups of treaties although there are multilateral environmental agreements involved with the earth biodiversity issue. The first group is called the seven biodiversity-related Conventions and the second is

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[1] David Farrier and Melissa Harvey, Solange Teles da Silva and Márcia, Diegues Leuzinger, Jonathan Verschuuren and Mariya Gromilova, Arie Trouwborst, and Alexander Ross Paterson *The Legal Aspects of Connectivity Conservation -- Case Studies* (IUCN, Gland, 2013) at [29-30].

[2] Louis J. Kotzé "Transboundary Environmental Governance of Biodiversity in the Anthropocene" in Louis J. Kotzé and Thilo Marauhn (eds) *Transboundary Governance of Biodiversity* (Brill Nijhoff, Boston, 2014) at [13-15], 31.

the Rio Conventions. The final section outlines the structure of the thesis and includes overviews of each Chapter.

2. Insights of the Earth Biodiversity Decay

Biodiversity is a fundamental of life on Earth. Its depletion causes significant harm to human wellbeing and the earth's ecosystem as a whole. It is very unpromising, yet true to point that several unsustainable human activities rapidly drive biodiversity losses. The Millennium Ecosystem Assessment 2005[3] provided evidence that human-induced change in land has resulted in significant losses in biodiversity and that this in turn had major impacts on the functioning of ecosystems. These impacts excessively affected the local members of society who relied most heavily on the natural environment. Insofar, the report highlighted the critical importance of biodiversity in supporting "ecosystem services" that were to enable human wellbeing.[4] The four main findings were clear that human activity was fundamentally and extensively changing the environment and leading to biodiversity losses on a massive scale.[5] Furthermore, the way in which humans had altered the natural environment may lead to benefits to society, whilst these tradeoffs were accompanied by rapidly increasing costs due to ecosystem depletion. These effects of these changes to ecosystems increased the sudden changes to the world around us. The report suggested that if society wished to avoid the devastating impact of continuing ecosystem degradation on development and economics, it was explicit that a substantial solution needed to be made in the way in which it properly valued around ecosystem services.[6]

As mentioned above human demand can grow unlimitedly. According to WWF's the Living Planet Report, 2008, during 1961-2005 the increase of human demands on resource consumption was inconsistent with bio-capacity. As a result of exploitation of the components of biodiversity it affected to ecosystem decay.[7] This liable report used complementary measures to explore the changing state of global biodiversity and of human consumption. The Living Planet Index aggregated trends of some wild populations of species on a worldwide basis. The report depicted those populations of vertebrate species (both marine and terrestrial species) had declined by approximately 30% between 1961 and 2005, while human demand on resources had increased gradually.[8] In the deeper details, the IUCN Red List 2008 showed that nearly a quarter (21%) of the world's evaluated known mammal species and a third (30%) of known amphibian species were known to be threatened or extinct.[9] Over a third (17,291 species) out of the measured

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[3] Millennium Ecosystem Assessment *Ecosystems and Human Well-Being: Synthesis* (Island Press, Washington DC, 2005).
[4] At vii.
[5] At [1-2].
[6] At [1-24].
[7] Chris Hails, Jonathon Loh, and Steven Goldfinger and others (eds) *Living Planet Report 2008* (WWF, Gland, 2008) at [6-7].
[8] At 8.
[9] Jean-Christophe Vié, Craig Hilton-Taylor and Simon N. Stuart (eds) *Wildlife in a Changing World: An Analysis of the 2008 IUCN Red List of Threatened Species* (IUCN, Gland, 2009) at [16-18].

47,677 species was threatened with extinction.[10] And 12% of the world's bird species was under threat.[11] The highest levels of threat were found in islands: 39 to 64% of mammals were threatened in Mauritius, Reunion and the Seychelles and 80 to 90% of amphibian species were endangered or extinct in the Caribbean, for examples.[12] (Hilton-Taylor, et al: 2009). It is significant to note that species extinction and population disappearance in different ecosystems have reduced global genetic diversity. The scholars state that the consequence of extinction reduces the integrity and adaptive potential of biodiversity, so such impact limits the prospects for resilient recovery after possible disturbance.[13] At this point, life on earth as we know will cease to exist.

The tendency of the global biodiversity depletion is evident. Both reports, the CBD Global Biodiversity Outlook 2, 2006[14] and the CBD Global Biodiversity Outlook 3, 2010[15] show similar results that overall the tendency of the global biodiversity has continually been declining. Five of the recognized main threats to biodiversity are stated as follows:

(1) invasive alien species,
(2) climate change,
(3) nutrient loading and pollution,
(4) habitat change and
(5) overexploitation.[16]

Overall, the reports revealed that the global overshoot was growing and, ecosystems were being depleted and also waste was accumulating in the air, land and water. The resulting deforestation, water shortages, declining biodiversity and climate change were placing the wellbeing of humanity at increasing risk.[17]

In 2012, the UNEP Fifth Global Environment Outlook (GEO5)[18] reaffirms that biodiversity and ecosystem services (welfare) are significant to human well-being. However, human's influences since 1945 have intensively caused significant tensions to ecosystems and the biosphere. According to the report, Figure 1.9 illustrates that there is implicit evidence that although humans have continually caused negative changes to the environment and biodiversity since primitive times, the "great acceleration" has started just after World War II.[19] It is important to note that the ecological crisis took only one generation to have a

[10] At [27-28].
[11] At 29.
[12] At [58-59].
[13] Stuart F. Chapin, III, Pamela A. Matson, and Harold A. Mooney *Principles of Terrestrial Ecosystem Ecology* (Springer, New York, 2002) at [274-277].
[14] CBD *Global Biodiversity Outlook 2* (Montreal, CBD, 2006).
[15] CBD *Global Biodiversity Outlook 3* (Montreal, CBD, 2010).
[16] At 9, 55.
[17] At [52-53].
[18] UNEP *GEO 5: Global Environmental Outlook 5: Environmental for the Future We Want* (2012) <www.unep.org/geo/geo5.asp>.
[19] At [22-23].

huge impact in terms of the deterioration of the earth's biodiversity. The situation does not seem to lessen. The 2014 Millennium Development Goals Report on Goal 7 (ensure environmental sustainability) stated that 13 million hectors of forests have been lost each year between 2000 and 2010.[20] This size was in contrast to the 14 percent of increasing protected areas worldwide.[21] The cause of deforestation was said in general to be due to the expansion of urbanization and large-scale agriculture. In sum, overall, the global trends on biodiversity losses and ecosystem decay remain the same as in the reports mentioned above previously, which confirmed that unsustainable human activities are a main driver that threaten such losses and degradation. So, it should be noted whether they are state or individual activities that relate to the Five Main Threats they should be restricted by law since the consequences threaten public health. It is a responsibility of every government to increase a strong enforcement to environmental policies/regulations within the context of serious threats to human health.

3. Biodiversity Losses and Human Health

Climate change contributes to the global warming problem such as prolonged drought and severe flooding which is an affect that results in the decline and loss of diversity.[22] Humankind spreading into natural habitats causes deforestation. Pesticides heavily used in modern agriculture destroy insects, birds and amphibians.[23] For example, if bees were lost, all the pollination of plants would reduce, so all diversity of world foods would be limited.[24]

Loss of biodiversity impacts human health directly. According to scientific evidence, the connection between biodiversity and human health is clearly seen in the spread of invasive species and pathogens.[25] Globalization and the transfer of exotic organisms have led to the relocation of local species with non-indigenous species. The increase of vectors and disease has also been an integral part of our human community, affecting both human and natural integrity. The history shows that some fleas, lice, and mosquitoes have released into new habitats, whether by a natural way or human-introduced transport, and has been responsible for malaria, dengue, Yellow fever, and West Nile.[26] These experts point out

[20] UN *the Millennium Development Goals Report 2014* (2014) at <http://www.un.org/millenniumgoals/2014>.
[21] At 40.
[22] Thomas E. Lovejoy and Lee Jay Hannah *Climate Change and Biodiversity* (Yale University Press, New Haven, 2005).
[23] Eric Chivian and Aaron Bernstein *Sustaining Life: How Human Health Depends on Biodiversity* (Oxford, Oxford University Press, 2008).
[24] David Pimental and Marcia Pimental "The Future: World Population and Food Security" in Colin L. Soskolne *Sustaining Life on Earth* (Rowman & Littlefield Publishers, Inc., 2008) at 294.
[25] Montira J. Pongsiri, Joe Roman, Vanessa O. Ezenwa, *et al* "Biodiversity Loss Affects Global Disease Ecology" (2009) 59 *BioScience* 11, 945, at 946.
[26] At [946-947].

that understanding the connection between biodiversity losses and human health should be integrated with conservation goals.[27]

4. Biodiversity as a Part of the Planetary Boundaries

There are growing concerns regarding biosphere and ecosystem collapse. As the history of the Earth evidently shows, such a critical balance may be disturbed by natural forces. It was generally assumed that human activities would have a low effect on natural processes because it was simply too small in relative terms to infer such gigantic natural forces. This assumption, however, is no longer the case. Indeed, the evidence of global-scale and local-scale degradation is potentially resulting in damaging the biosphere system. Global Biodiversity Outlook 3 refers to this change as "the tipping point."[28] Tipping point refers to the stage wherein a collection of impacts create conditions in such a way that systems shifts from one state to another and cannot recover over a short period of time.[29]

In 2009, Johan Rockstrom and his colleagues at the Stockholm Resilience Center illustrate that the earth's life-supporting systems or "planetary boundaries" as "a safe operating sphere" where life can live, consisting of nine spaces, has been threatened by anthropogenic activities. There are "climate change, biodiversity loss, nitrogen and phosphorus cycles, stratospheric ozone depletion, ocean acidification, global freshwater use, changes in land use, atmospheric aerosol loading, and chemical pollution."[30]

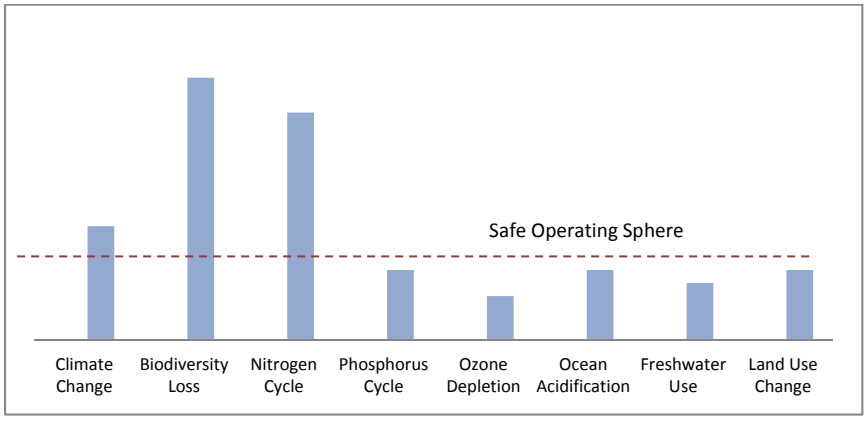

Table 1: Safe Operating Sphere (adapting from Rockström's diagram)

[27] Carlos Corvalan, Simon Hales, Anthony McMichael *Ecosystems and Human Well-Being: Health Synthesis* (WHO Press, Geneva, 2005) at [48-49].
[28] UNEP/CBD *Global Biodiversity Outlook 3* (2010) above n 15 at [71-72].
[29] At 72.
[30] Johan Rockström and Anders Wijkman *Bankrupting Nature: Denying Our Planetary Boundaries* (Rev. ed, Routledge, Abingdon, 2012) at [44-47]; and Johan Rockström, Will Steffen, Kevin Noone, and others "Planetary Boundaries: Exploring the Safe Operating Space for Humanity," (2009) *14 Ecological and Society*, 2 art 32, <www.ecologyandsociety.org/vol14/iss2/art32/>.

According to this study, the safe operating sphere is indicated as the low risk zone that draws a limitation of human capacity to live safely under the dangerously environmental change. The study estimates that the trend of overshooting could alter these safety zones. The figure above shows that three of nine spaces have surpassed the safety boundary.

Here the study provides for a better understanding of the earth's systems beyond the physical object. Ecological and biological functions play a role to support lives. In other words, the earth scientists show that the planetary boundaries consist of nine elements that are interdependent and cannot be divided or certainly captured by any legal/political assumption. The integrity of earth's biodiversity sustains the life-supporting systems. Ecological resilience depends on biodiversity and its integrity as well as the bio-geo-chemical systems flow across social and territorial boundaries.

5. Collapse of the Biosphere?

E.O. Wilson wrote "Is Human Suicidal?" in 1993, mentioning a collapse of the biosphere, resulting from global biodiversity depletion.[31] At present, Glen Barry (2013) analyzed that biodiversity losses and other major forces could have a potential impact on biospheric collapses, based on ecology's percolation theory.[32] The above diagram shows that climate change, the loss of terrestrial ecosystems consisting of primary forests and over-loading of the nitrogen cycle have gone beyond limitation (safe-operating area), so its decline could be linked to the collapse. As stated above, at the global scale, the biosphere depends on biodiversity, which provides it with elements of the various bio-geo-chemical cycles.

Chemical compounds are passed from one organism to another and connect one part of the biosphere to another through the biogeochemical cycles. These different cycles are related to one another. As such, there is no nitrogen cycle without carbon, hydrogen, oxygen, and so forth. Bio-geo-chemical cycles are being altered dramatically because of climate change and other human impacts on our biodiversity, as Earth's habitats have various chemical compositions. While oceans are wet and salty, forest soils are rich in organic forms of nitrogen and carbon that retain moisture. Although the biosphere has fairly constant levels of chemical compounds, with the extra-loaded chemical compositions from industrial and/or massive deforestation from human activities, while some of chemical substances increase, others decrease.

In terms of the sustainability of the biosphere, these environmental consequences affect the stability of the biosphere. At a local scale, the biodiversity of the biosphere also matters. Stuart F. Chapin III and his colleagues wrote the Article Biotic Control over the Functioning of Ecosystems.[33] In their research,

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[31] E.O. Wilson "Is humanity suicidal" (1993) 31 *Biosystems* no.2-3, p. 235-242, at 238.
[32] Glen Barry "Terrestial ecosystem loss and biosphere collapse" (2014) *25 Management of Environmental Quality: A International Journal* 5, at [542-563].
[33] Stuart F. Chapin III, Brain H. Walker, Richard J. Hobbs, and others "Biotic Control over the Functioning of Ecosystems" (1997) 277 *Science* 5325, at [500-504].

published in SCIENCE (1997), human-induced changes in biotic diversity and alterations to the structure and functioning of ecosystems have led to “a homogenization of the global biota” [34] (contributing to the process of decline in biodiversity). These small scale biotic changes will influence ecosystem processes sufficiently to alter the future state of the world’s ecosystems and its services (welfare).[35] Decline or disturbance in the diversity of species, plants, vertebrates and invertebrates of those keystone species that influence water and nutrient dynamics and tropic interactions will affect ecological networks. These changes are profoundly altering the functioning of the biosphere.[36]

In 2000, sciences developed projections of different scenarios based on changes in biodiversity for the year 2100 involving several consequences from atmospheric carbon dioxide, climate, vegetation, and land use sensitive to the biomass.[37] With respect to the limitation of the earth's carrying capacity, the anthropogenic factors have driven ecological capacity beyond maximal boundary. The message the scientists point to the term they refer to as biosphere collapse.

According to Anthony D. Barnosky and his co-authors, the outcome of their research is concerning. Published by Nature, “Approaching a State Shift in Earth’s Biosphere”[38] warns us that Earth may be approaching a state shift, “a ‘tipping point’ at which the global ecosystem may shift abruptly and irreversibly from one state to another.”[39] “Global-scale state shift” can happen unpredictably. This apocalyptic scenario assumes that Earth could locally and globally absorb a certain degree of alteration without causing a major “state-shift,” or “suddenly collapse”.[40] The authors focused on the direct and indirect effects of human development. The impact of direct action occurs from local (within national territory) transformation of ecosystems by development such as cities, industry and agriculture, while indirect action impacts global transformation of the climate by the accumulation of greenhouse gases in the atmosphere. The authors further describe that in the history of Earth, state shifts have occurred in the past, such as the “Last glacial-interglacial transition, the 'Big Five' mass extinction and the Cambrian explosion.”[41] The outcome has been the creation of forceful shifts which are the result of several different factors combined. However, the main drivers that cause the present global-scale shift are human population growth and its attendant resource consumption, habitat transformation and fragmentation, energy production and consumption and climate change. The authors point out that current estimates for direct human transformation of the Earth's landscape are higher than the retreat of glaciers at the end of

[34] At 502.
[35] At 502.
[36] At 503.
[37] Sala E.Osvaldo, Stuart F. Chapin III, Juan J. Armesto, and others "Global Biodiversity Scenarios for the year 2100" (2000) 287 *Science* 5459, at [1770-1774].
[38] Anthony D. Barnosky, Elizabeth A. Hadly, Jordi Bascompte, and others "Approaching a state shift in Earth/'s biosphere" (2012) 486 *Nature* 7401 at [52-58].
[39] At 52.
[40] At 53.
[41] At 53.

last ice-age by 13 percent of the Earth's surface.[42] This massive landscape transformation has gone hand in hand with intensive human activities. Anthropocentric-induced global warning as a result of the increase in GHGs in the atmosphere is happening faster than in the past, caused by solar radiation in the northern hemisphere. This research suggests that another global-scale state shift is highly plausible within decades to centuries, that is, if it has not already been initiated. The physical biosphere and biodiversity has changed dramatically. The authors conclude that "as a result, the biological resources we take for granted at present may be subject to rapid and unpredictable transformations within a few human generations."[43]

6. Biodiversity and Biological Diversity: Why Does the Term Matter?

Indeed, there are two philosophical perspectives, environmental reductionists and holists, embedded in the biodiversity's definition. [44] Both "Biological diversity" and "Biodiversity" seem to be commonly used to have a similar meaning. However, they have a significant difference when applied to governance. Biological diversity seems to rely on reductionism focusing on the conservation of individually valued species, or genes, or ecosystems. In contrast, biodiversity refers to ecological holism that includes the relationship between tangible and intangible biodiversity.

'Biological diversity' was firstly used by biologist Thomas Lovejoy at an international conference in 1980 regarding his research in the Amazon rainforests in order to describe the decline of particular species found in the area.[45] Then the term was reduced to 'biodiversity' by Walter G. Rosen, in 1985[46] in order to include the definition of variety and variability of living organisms and species richness. And it emerged from the scientific debate, whether biological diversity or biodiversity first appeared as a middle ground between the conservation reductionists and ecological holists on natural protection.[47] Since the time of the debate, numerous authors, from Stephen Jay Gould, Paul Ehrlich, Yvonne Baskin, Stephen Keller, and Niles Eldridge have made contributions to the terminology.

However, in 1992 the term "biological diversity" was chosen to become a significant word which was legally recognized by the UN Convention on Biological Diversity (CBD) at the 1992 Rio Conference. By the CBD's version, definition of biological diversity is provided as

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[42] At 54.
[43] At 57.
[44] Klaus Bosselmann *When Two Worlds Collide* (RSVP, Auckland, 1995) at [144-157, 162-163, 172-173].

[45] Timothy J. Farnham *Saving Nature's Legacy: Orgins of the Idea of Biological Diversity* (Yale University Press, New Haven, 2007) at 208.
[46] Markku Oksanen "Biodiversity Considered Philosophically" in Markku Oksanen and Juhani Pietarinen (eds.) *Philosophy and Biodiversity* (Cambridge University Press, 2004).
[47] Gary P. Nabhan "The Dangers of Reductionism in Biodiversity Conservation" (1995) *Conservation Biology* Vol. 9 Issue 3 at [479-481]; and Reed F. Noss "From Endangered Species to Biodiversity" in Kathryn A. Kohm (ed) *Balancing on the Brink of Extinction: Endangered Species Act and Lesson for the Future* (Island Press, Washington DC, 1991) at [227-229].

> "the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems." [48]

It is undeniable to say that the CBD is one of the most complex agreements, combining several contradictory issues into a single package.[49] In it the CBD's definition refers to the variety of life forms on planet Earth. Biological diversity includes genes, species and ecosystems that must be protected and conserved in *in-situ* and *ex-situ* conservation.[50] Under this definition, it is fair to mention that a fundamental principle requests prohibition and restricted human activities that present potential harms to biological diversity at every level. No doubt about that, the CBD definition of biological diversity does not exclude the holistic concept that aims to protect *everything* in the community of life under the name of the biodiversity.

In the drafting process the term biodiversity was however argued that the definition provided a very broad term that could impact the commercial interests of other natural resources relating to the term. With the goal of securing economic interests, the CBD created the new term, "biological resources,"[51] to limit the ecological characteristic of the biodiversity, under the language of resource utilization. The Convention provides an example of biological resources as genes, species and ecosystems "with actual or potential use or value for humanity"[52] to link these new types of genetic resources to biotechnological industry. So, it implies that 'selecting useful genes, species, ecosystems' do not classify as natural biodiversity that the CBD originally aims to protect. Therefore, it leads to a deeper philosophical dilemma in biodiversity management.

As a result of neoliberal biodiversity conservation, biological resources create confusion to state parties to design which types of biological diversity should be conserved and to which degree. The outcome has an impact on the strong approach for biodiversity protection. Indeed, although both terms are difficult to distinguish in any physical matter, they are distinct in terms of their instrumental and intrinsic values. It has been pointed out that while the biodiversity based on ecological interpretation focuses on protecting-maintaining management, biological resources based on conserving-using aims to the open-access and sharing of benefits. This latter term seems to place exception that may damage the core significance of biodiversity in biodiversity governance when combining to economic and social development or cost and benefit analysis. Here, it should be noted that while the real meaning of biological diversity which depends on ecological interpretation concentrates on protecting integrity of biotic community. However, instrumental values of biological resources serve exploitation.

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[48] CBD, Article 2.
[49] Timothy Swanson *Global Action for Biodiversity* (Earthscan, London, 1997).
[50] CBD, Article 8.
[51] CBD, Article 2.
[52] CBD, Article 2.

In this problematic situation, Oguamanam argues that both concepts require further explanation.[53] Due to the lack of clear distinction between 'biodiversity' and 'biological resources', terms are used in an overlapping fashion on purpose, this is so prejudiced usage of biodiversity may produce a lack of concern on ecological meaning of biodiversity. He points out that it is important to realize 'biological diversity' was originally used in a scientific research in regard to the depletion of living things as a consequence of human activities and development.[54] Indeed, the term does not mean as same as natural resources, rather it refers to a part of the earth life-supporting systems.[55] As can be seen in the IUCN, it states that "biodiversity is an attribute of life in contrast to biological resources which are tangible biotic components of ecosystems."[56] Oguamanam further suggests that the biodiversity as a conceptual abstraction is better appreciated as a core attribute of life of Earth.[57] This means protecting diverse life forms is a prerequisite of biodiversity conservation as a result of sustaining biodiversity referring to or signifying biotic resources.

7. Wilson's Revision of Biodiversity

From endangered wildlife to the variety of life forms, those scientists expected to expand the area of protection to cover all life on the planet. Biodiversity as a term was first publicly used by E.O. Wilson in 1988 after his edited work.[58] Since then, Wilsons' version (1988) as cited many scholars has been found in many literary publications.

> "Biodiversity is the total hereditary variation in life forms, across all levels of biological organization, from genes and chromosomes within individual species to the array of species themselves and finally, at the highest level, the living communities of ecosystems such as forests and lakes."[59]

The term aimed to describe the entire diversity of life forms, and was especially inclusive of the role of genetic and ecosystem diversity beyond individual animals. Wilson viewed the debate related to the biodiversity term as corresponding to a gradual change in biologists' thinking, the school of reductionism in terms of individual species being replaced with a more holistic type of thinking.[60] With respect to the earlier studies, one must note that Wilson's context of 'biodiversity' does not infer that other scientists are not concerned about the diversification of life. In fact, variation of life is not a new concept. Prior to

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[53] Chidi Oguamanam "Biological Diversity" in Shawkat Alam, Md Jahid Hossain Bhuiyan, Tareq M.R., Chowdhury and Erika J. Techera (eds) *Routledge Handbook of International Environmental Law* (Routledge, London, 2013) at [209-210].

[54] E.O. Wilson "Biodiversity" in E. O. Wilson and Frances M. Peter (eds) *BIODIVERSITY* (National Academy Press, Washington DC, 1988).

[55] Christian Lévêque Jean-Claude Mounolou *Biodiversity* (John Wiley and Sons, Ltd, Chichester, 2003) at [125-126].

[56] Oguamanam "Biological Diversity", above n 53, at [210-211].

[57] At 211.

[58] Marjorie L Reaka-Kudla, Don E. Wilson, E.O. Wilson (eds) *Biodiversity II: Understanding and Protecting our Biological Resources* (Joseph Henry Press, Washington, 1997) at [1-6].

[59] Boris Zeide " Nature's Surprises" (2004) 85 *Bulletin of the Ecological Society of America* 3, at [120-124]; and E.O. Wilson *Naturalist* (Island Press, Washington, 1994).

[60] E. O. Wilson *The Diversity of Life* (Harvard University Press, Cambridge,1992).

Wilson's modern era, other terms (such as "living nature"[61] and "diversified flora/fauna,"[62]) were used in scientific practices for the purpose of conveying similar meanings. The concept of biodiversity protection has been observed since the time of George Perkins Marsh in *Man and Nature (1864)*, Aldo Leopold's *A Sand County Almanac (1949),* Fairfield Osborn's *Our Plundered Planet (1948)* and Rachel Carson's *Silent Spring (1962),* respectively.

These books brought the situation of disappearing biological diversity to the awareness of the public and illustrated the value of protection. For example, Rachel Carson, *the Silent Spring*, brought forward the environmental history of biodiversity protection to life in the United States. While the world was being led by economic growth, the book drew the public's attention to protecting the 'community of life' as a whole.[63] Rachel's classical argument exemplified the true value of biodiversity in that it was meant to be all about the intrinsic values of biodiversity. Humanity might gain economic benefits, for example by getting rid of pests out of the fields, yet other life forms living in the community of life that help sustaining ecosystem also die as a result.

In the decade of debate, the notion of "biological crisis" was a significant concern among biologists in the early 19 century. David Ehrenfeld (1988) included in the notion of biodiversity the concept of "irreversibility".[64] While the irreversible crisis raises debates about measures and definitions, the term biological diversity reflects these links as connected to notions of extinction.[65] Because so many species still remained undiscovered, it could be taken for granted that individual or habitat protection can solve the biological crisis. Even though it may be effective to conserve a particular species or place(s) that is not an answer for the long term. According to this perspective, a shift occurred that rather focused on "valuing ecosystem processes."[66] Later, even Wilson himself seems to accept the values of ecological holistic in a broader sense.[67] If the modern term of biodiversity starts from Wilson, it can also be changed by him. In several late works such as the *Biophilia* (1984), the *Creation* (2006) and the *Social Conquest of Earth* (2012) Wilson has gone beyond conservative reductionist, focusing on individuals and in regard to a new version of Wilson, he discusses the sense of human-as-part-of-nature as inherently embedded in our

[61] Alexey V. Yablokov and Sergey A. Ostroumov *Conservation of Living Nature and Resources Problems, Trends, and Prospects* (eBooks, Springer eBooks,1991).
[62] Michael J. Scott, Blair Csuti, Kent Smith and others "Gap Analysis of Specie Richness and Vegeration Cover: An Intergrated Biodiversity Conservation Strategy" in Kathryn A. Kohm (ed) *Balancing on the Brink of Extinction: Endangered Species Act and Lesson for the Future* (Island Press, Washington DC, 1991) at [282-295].
[63] Rachel L. Carson *Silent Spring* (Houghton Mifflin, Boston, 1994). See also, Carson L. Rachel *Silent Spring: The Classic that Launched the Environmental Movement* (Houghton Mifflin Harcourt, 2002).
[64] David Ehrenfeld "Why Put a Value on Biodiversity?" in E.O. Wilson (ed) *Biodiversity* (National Academy Press, Washington DC, 1988) at [212-216].
[65] David Takacs *The idea of biodiversity*: *Philosophies of Paradise* (Johns Hopkins University Press, Baltimore,1996).
[66] At [10-11].
[67] At [46-50].

genes. In this way, it is related to the Gaia theory and Deep Ecology that humans are part of the larger community of the biosphere.[68]

Moreover, it is acknowledged that biodiversity includes functioning diversity related to these components.[69] Biodiversity and its components are an integral part of the earth biosphere.[70] Biodiversity integrity is significant to the earth life supporting system.[71] Furthermore, biodiversity is not only a particular group of species or richness of species, but also complexities of life forms, interacting together within the physical environment they inhabit, creating the variety of ecosystems from the top of mountains to oceans.[72] As mentioned, the integrity of biodiversity which constitutes the totality of earth's biological resources, or of a given region, are of fundamental importance to humans.[73] Diverse life directly provides us with our fundamental needs including food, fibers, energy and medicines. And there are other benefits that we obtain from the community of biodiversity known in scientific terms as ecosystem services such as the purification of air and water, moderation of floods and droughts and the stabilization of climate.[74] And, such eco-services need to be maintained in a healthy condition of ecosystems that mean a fully physical and functional biodiversity guarantees the ecological processes which are necessary to provide eco-services to human community.[75] For example, the significant function of interdependence of both is the transformation solar energy through and across photosynthesis, biogeochemical cycles, and food webs.[76]

The argument is that defining biodiversity as the objects, biological resources, assets and commodities based on the CBD's utilitarian view is destructive to the core concept of biodiversity. Thus far, although the CBD has recognized the intrinsic value of biodiversity, it is eclipsed by the instrumental value that limits its benefits for only humans. It may be said that another non-human world does not need to use biodiversity, so the rights to use biodiversity do belong to human beings. This narrow point of view ignores the larger and more in-depth roles of biodiversity, its complexities and ecological interdependence, in that it provides the life-supporting systems for free to all life forms. However, in regard to today's anthropogenic climate change, rethinking about the relationship between biodiversity and its functions may change the anthropocentric paradigm that considers humans' interests above

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[68] E.O. Wilson *The Creation: An Appeal to Save Life on Earth* (W.W. Norton& Company, NY, 2006).
[69] David Tilman "Functional Diversity" in Simon A. Levin (ed) in *Encyclopedia of Biodiversity,* Vol.3 (Academic Press, 2001) at [109-120].
[70] Rockström and Wijkman *Bankrupting Nature Denying our Planetary Boundaries,* above n 30, at [46-47].
[71] CBD, Article 2 Ecosystem Definition.
[72] IPCC *Climate Change and Biodiversity*: IPCC technical Paper V, 2002 at <www.ipcc.ch/pdf/technical.../climate-changes-biodiversity-en>.
[73] Millennium Ecosystem Assessment *Ecosystems and Human Well-Being: Synthesis*, above n 3, at [1-24].
[74] At [1-24].
[75] D.U. Hooper, F. S. Chapin, III, 2 J. J. Ewel, and others "Effects of Biodiversity on Ecosystem Function: A Consensus of Current Knowledge" (2005) 75(1) *Ecological Monographs* 3-35, at [5-6].
[76] Paul R. Ehrlich, Anne H. Ehrlich, and John P. Holdren "Availability, Entropy, and the Laws of Thermodynamics" in Herman E. Daly and Kenneth N. Townsend (eds) *Valuing the Earth: Economic, Ecology, Ethics* (MIT Press, 1993) at [69-73].

Nature. As such, this can be seen in the late works of Edward O. Wilson, the proponent of the oldest perspective of biodiversity and it has been marked as an interesting point. "Biodiversity means, in the simplest terms, the variety of life found in the Creation: it is the entirety of life on the planet."[77] The word creation with a capital "C" provides us with a deep sense of meaning beyond a shallow sense of scientific rationality. At the end, Wilson points out the values of biodiversity culture that underpins several cultures all over the world.

Although modern scientists and natural philosophers are now able to appreciate the complexity of the interconnections between biodiversity and natural environment, the growth of the human population and our unsustainable activities are putting Earth under unprecedented pressure. Climate change, for example, could lead to a world with an impoverished ecology that is barely habitable by humans. Mass deforestation causes biodiversity losses and destroys ecosystem functions. If any part of this web suffers a breakdown, or if we lose the ecological or biological integrity, the future of life on the planet will be at risk.

8. Valuing Biodiversity

In connection with valuing biodiversity, the two schools of thought include Anthropocentricism and Ecocentrism. Both raise complicated questions with respect to biodiversity protection. For anthropocentricism, the natural world depends on the values related to humanity. The fundamental principle of anthropocentrism is that value can only arise from human beings based on rational thinking. This is because we think, we are different from other animals. Based on Rene Descartes philosophy: *cogito ergo sum*[78] signifies 'rational self-interest' this doctrine advocates anthropocentricism. To challenge the old religious paradigm, Descartes stated that the entire living organism was an entity operating based on the law of physics. Humans have the ability to extract the power of the physical world for the purpose of serving human interests. It is legitimate for humans to have a dominion over all creatures.[79] By including modern technology, science and economics, their evaluation is utilitarian based. Anthropocentric and utilitarian perspectives both value things as resources. They may see no difference between natural resources, wildlife and biodiversity, therefore their view is that a variety of biological resources provide more chances and choices to humans. Those who take a homocentric approach agree on natural values in terms of it having 'instrumental value.' By seeing everything in the natural world in tangible values, these values exist while available. For example, a dead tree as timber has more instrumental value when it is sold, but a living tree provides nothing. A community of diverse trees as wilderness has non-economic value unless they are viewed as carbon sinks for carbon credit. Oil would

[77] E.O. Wilson "the Creation of Biodiversity" in Peter H. Raven (ed) *Natural and Human Society: the Quest for a Sustainable World : Proceedings of the 1997 Forum on Biodiversity* (National Academy Press, Washington DC, 2000) at [22-29].
[78] Richard A. Watson *Cogito Ergo Sum: the Life of Rene Descartes* (David R. Godine, Boston, 2002) at [19-20].
[79] Bosselmann *When Two World Collide,* above n 44, at [162-163].

not have any value if machinery did not exist. Wilderness area is valueless unless the land would be developed. The anthropocentric worldview is popular for dealing with natural resources. Human interests related to biodiversity because it is the most important thing for humans to survive, therefore it is worth conserving. Biodiversity provides basic needs such as food, drug and fuel. This worldview can be seen in various international declarations and the UN document that focuses on human development based natural resource management.

The second philosophy is eco-centrism that includes organism, holism, unity of mind and nature, intrinsic value, and harmony with nature. These concepts, based on ecological understanding, can be linked together in a way to ensure that nature is valued for its own sake. Those (deep) eco-philosophers view the human community as a part of earth community. And they seem to accept the value of nature in the connection between living beings and places, species and habitats and the earth's ecosystems. That value is called nature's 'intrinsic value.'[80] Unlike instrumental or utilitarian values, the view in terms of the intrinsic value of biodiversity and ecosystem believes that biodiversity exists for its own sake and life has its own values.[81] It is worthy in and of itself, independently, regardless of human interests, whereas the intrinsic value of nature as has been argued by anthropocentricism in relation to biodiversity protection has been an ongoing debate.[82] The instrumentalist points to its unclear definition, and points out that its' fundamental meaning involves many religions and belief systems, rather than focusing on human benefits. However, at the present the intrinsic value is well defined in several terms such as the resilience and integrity of biodiversity. They truly support all life on Earth equally and without discrimination. Based on Lovelock's the Gaia theory[83] and Capra's the web of life,[84] in that the intrinsic values of nature co-exist with secular and religious societies have been made a concrete approach necessary to protect biodiversity as a system. Evidence for this can be seen in the preamble of the Biodiversity Convention, 1992. The convention emphasizes intrinsic values as first among various values. Although the convention does not provide further meaning, it implies the significance of the intrinsic values of biodiversity.

8.1 Instrumental Value

"Biodiversity as a commodity" is a mainstream paradigm. A statement clearly stated by Geoffrey Heal points to the instrumental value of biodiversity.[85] Basically, the use value is the utilitarian value of biological resources that rely on technological and economic measures which is a means of distribution and allocation. Evaluating the cost and benefit analysis of biodiversity provides a basis for determining

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[80] *World Charter for Nature*, UNGA Res. A/RES/37/7 (1983). See also, CBD at Preamble.
[81] Patrick Curry *Ecological Ethics: an introduction* (Polity Press, Cambridge, 2005) at 41.
[82] Alexander Gillespie *Conservation Biodiversity and International Law: New Horizon in Environmental and Energy law* (Edward Elgar, Cheltenham, 2012) at 111.
[83] James Lovelock *The Vanishing Face of Gaia: a Final Warning* (Penguin Books, NY, 2009).
[84] Fritjof Capra *the Web of Life: a New Scientific Understanding of Living Systems* (New York, Anchor Books, 1996) at [35-36].
[85] Geoffrey Heal "Biodiversity as A Commodity" in Simon Asher Levin (ed) *Encyclopedia of Biodiversity*, Volume 1 A-C (Academic Press, San Diego, 2001) at 377.

total value.[86] The different categories of instrumental values are applied to biotic resources as direct values. This measurement includes consumption use values and productive use values.[87] In terms of industrial material**,** biological resources have been seen as raw materials for industrial use for century. In terms of tradable or commercial values, biodiversity supports small or large businesses in markets all over the world. The economic values can directly be changed to incomes consistent with the mainstream economic system. Unlike intrinsic values, instrumental values should be counted as the real value of biodiversity.[88] Biodiversity is a fundamental source of natural information. Biotic resources such as plant genetics are utilized in biotechnology to produce "green products" in pharmaceutical/food industries.[89] Genetic diversity contains genetic information used by local people to create varieties of new crops or livestock.[90]

Trade in medical herbs is an international business. According to the US Food and Drug Administration, more than half of all the medical prescriptions in the USA are derived from biological resources.[91] With regard to the global pharmaceutical market, the USA, the EU and Japan have produced over 80 percent of the world's production in terms of active ingredients.[92] Only 20 percent of them have originated from developing countries. However, it can be seen that pharmaceutical compounds that serve as models or as chemical templates for new drugs tend to be found in plants from tropical rainforests in the developing countries, for example, quinine and aspirin.[93] For traditional users, traditional knowledge related to drug prescription has contained cultural values for local communities. Hence as biodiversity has informational and evolutionary value, it is suggested that biodiversity should be recognized as a part of the global commons.[94]

8.2 Intrinsic Value

With respect to the protection of biodiversity, the term intrinsic value is used to refer to the core meaning. Arne Naess stated that the intrinsic value of nature *(naturens egenverdi)* is as "a value in itself".[95] This

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[86] At [361-362].
[87] At 361.
[88] Sahotra Sarkar *Biodiversity and environmental philosophy: an introduction* (Cambridge University Press, Cambrdige, 2005).
[89] David Vivas-Eugui and Oliva Julia Maria *Biodiversity Related Intellectual Property Provisions in Free Trade Agreements* (International Cebter for Trade abd Sustainable Development, Geneva, 2010) at 2.
[90] At 2.
[91] Karan Vasisht and Kumar Vishavjit *Trade and Production of Herbal Medicines and natural Health Products* (UN Industrial Development Organization and the International Centre for Science and High Technology, Trieste, Italy, 2002) at 41.
[92] At 3.
[93] Heal "Biodiversity as A Commodity", above n 85, at 364.
[94] Klaus Bosselmann "Plants and Politics: The International Regime Concerning Biodiversity and Biotechnology" (1996) 7 *Colo.J. Int'l Envtl. L.& Pol'y* 111 at [111-148].
[95] Arne Naess *Ecology, Community, and Lifestyle: Outline of an Ecosophy* (Cambridge University Press, Cambridge, 1989) at [11-12].

term clearly appears in the Biodiversity Convention 1992[96] and it means that biodiversity has value in and of its own sake without human's interference or human's extraction. It is good "in itself" and can be used to clarify its inherent existence. The UNESCO reports on *Ethics and Biodiversity* (2011) points out that the intrinsic value should refer to non-instrumental values. Moreover, biodiversity processes support chemical nutrients including carbon, oxygen, nitrogen, phosphorus and water through the biosphere.[97] Varieties of plants and animals exist to maintain the balance of these cycling substances.[98] Biodiversity creates the natural fertility of ecosystems, for example, soil for plantations. Humans gain some benefits from these complex/dynamic values.

Intrinsic values of biodiversity provide a transformative benefit that differs from other materials or the man-made objects. Eco-functional process contains intangible values than tangible value. For instance, there are uniqueness of this transformative value; that is, 'resilient ecosystem' to human well-beings.[99] According to research studies, socio-ecologists observe the roles of resilient values that connect humankind to biodiversity. As Gunderson points out "humans and societies depend on resilient ecosystems if they are to survive and thrive."[100] Indeed, the term 'resilience' is defined as "the capacity of an ecosystem to withstand a disturbance, and maintain the same basic processes and structures."[101] Surely enough, this ecological capacity requires the integrity of biodiversity to support it functioning well.

Furthermore, Holling defines "ecological resilience as the amount of disturbance required 'to flip' the system into an alternative state."[102] It may be understood that this ecological capacity has its own tolerant limitation in terms of human intervention. Under the ecological reality of human-nature relationship, those scientists suggest the term 'social-ecological system' which is referring to the amount of disturbance that a given ecosystem can absorb before it shifts to the next state which may or may not become an unknown character in a different set of processes and structures.[103] So, the approach of the resilient system points to the new social change that shifts from the human domain that once dominated nature to the ecological domain. Here ecological resilience may be counted as intrinsic values in that it in fact becomes a part of the bigger term 'value of ecological integrity'. So, Integrity can be viewed as an intrinsic value of biodiversity.[104] It is described as “the integral functional diversity” of natural transactions

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[96] CBD, at Preamble.
[97] Neil Winterton *Chemistry for Sustainable Technologies: A Foundation* (RCS Publishing, Cambridge, 2011) at [71-99].
[98] At 72.
[99] Garmestani S. Ahjond, Allen R. Craig, Arnold (Tony) Craig Anthony and Gunderson H. Lance *Social-Ecological Resilience and Law* (Columbia University Press, 2014) at [5-7].
[100] At 5
[101] At 6.
[102] At 6.
[103] At 7.
[104] Laura Westra *An Environmental Proposal For Ethics: The Principle of Integrity* (Rowman & Littlefield, Lanham, 1994) at 69.

throughout the Earth's biosphere and physical environment.[105] It consists of the specific exchanges and cycles of the natural food web. These cycles have a systematic integrity that must not be violated unless by an evolutionary process.

Another value that clearly exists is 'eco-interdependent value.'[106] Ecosystem networks create value independently. For continued existence and prosperity in the ecosystem, every creature big or small depends on others. The integrated functioning of ecosystems establishes cooperative relationships in the biotic community. This value of relationship promotes harmony with nature and leads to the values of sustainability. As it relates to our community of life, sustainable value maintains fairness toward all other components. For example, although some species of insects that some humans refer to as pests might have their own value to wild flowers, and trees.[107] They may transfer pollen and seeds from one flower to another in a harmless exchange, so flowers can grow and reproduce. Other pollinators such as bats or birds also deserve intrinsic value for their own sake. The diversity of forests also has intrinsic value in terms of its' own ecosystems. Intrinsic values of eco-interdependence of diverse trees relate to the benefits that tree provides to the landscape it is located in. For instance, mangrove forests safeguard many species from storms and are a nursing home for marine species. A variety of life forms are cooperatively altruistic toward each other within a community, for example, the immature shrimp that rely on the decomposing leaves of mangrove trees for food. Another example related to the mangrove is the value of storm buffering. Natural mangrove forests can reduce the risk of damage from tsunami and the replacement costs of coastal protection.[108]

9. Biodiversity and Bio-complexity

To clarify and offer a better explanation it is not possible for bio-diversity to be outweighed by biological resources. This is since its role of functional complexity cannot be separated from a commodity item. The term "bio-complexity" refers to "the result of functional interactions between biological entities, at all levels of organization, and their biological, chemical, physical, and social environments."[109] It is described that "this biotic interactive involves all types of organisms from microbes to humans, all kinds of environments from polar spheres to temperate forests to agricultural regions, and all human activities affecting these organisms and environments."[110] In this way, it suggests that the characteristics of bio-complexity integrate human's community to the earth's community in a profound understanding of the living system as a whole.

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[105] At 70.
[106] Shahid Naeem, Daniel E. Bunker, Andy Hector, and others *Biodiversity, Ecosystem Functioning, & Human Wellbeing* (Oxford University Press, Oxford, 2009) at 249.
[107] Stephen L. Buchmann *the Forgotten Pollinators* (Island Press/Shearwater Books, Washington DC, 1996).
[108] Naeem, Bunker, Hector *Biodiversity, Ecosystem Functioning, & Human Wellbeing,* above n 106 at [257-258].
[109] Lévêque Jean-Claude Mounolou, *Biodiversity* , above 55, at 8, [125-126].
[110] At 8.

Speaking of bio-complexity in terms of a network of interconnectedness, it is not new. Physics may say "a butterfly flapping its wings affects the weather in another part of the world." This is referred to as the "butterfly effect theory" of Edward N. Lorenz, who believed that all parts of the planet Earth are linked together.[111] As individuals, human beings have been connected to all other life forms that share the natural environment with us. According to F. Capra's the "living system" (1996), things are connected in this "web of life."[112] Capra described that in nature there are only networks nesting within other networks, that "living systems are integrated wholes whose properties cannot be reduced to those of smaller part." [113] This relationship between the natural and human world exists at many different levels that include physical, chemical and biological and social and cultural factors. The global cycling of large and small elements involves physical transport by wind and water across continents. Plants and animals rely on suitably functioning global water, carbon and nitrogen cycles for living. Interdependence between organic and inorganic chemical reactions links '*everything*' together. Various life forms are connected through mutual exchange of oxygen and carbon dioxide via photosynthesis. So, it does not a matter how small or large they are. It is the links between biochemical reactions carried out within their cells rather than the size of the life forms. Nevertheless, Capra notes that it is important to recognize that natural evolutionary progress is complex, dynamic and vulnerable, and because of that the networks are changeable over time, depending on natural environment factors.[114]

Although Earth scientists and natural philosophers currently have a better understanding of the complexity of the interconnections between biodiversity and the natural environment, the growth of human population and our unsustainable activities are placing Earth under unprecedented pressure.[115] Climate change, for example, could lead to collapse of territorial ecosystems.[116] Mass deforestation causes biodiversity losses and alters ecosystem functions. If a part of this ecological network stops working, or if life-supporting systems lose ecological or biological integrity, the future of every life form on Earth will be in danger.[117] Natural connectedness is as John Muir suggested, "When we try to pick out anything by itself, we find it hitched to everything else in the Universe."[118] Because human beings are a part of the Earth system, changes occur in nature, whether by the force of natural processes or human action, will affect all communities of life on Earth.

Currently, scientific study suggests that human activities have a significant impact on the functioning of the biosphere. It is clear that resilient ecosystems need integrity biodiversity to maintain resiliency of

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[111] Edward N. Lorenz "Predictability: a Problem Partly Solved" in Palmer Tim and Hagedorn Renate (eds.) *Predictability of Weather and Climate* (Cambridge University Press, Cambridge, 2006).
[112] Capra *The Web of Life*, above n 84, at [36-38].
[113] At 37.
[114] At [190-191].
[115] Folke Carl and Gunderson Lance "Reconnecting to the Biosphere: a Social-Ecological Renaissance" (2012) 17 *Ecology and Society* 4, at 55.
[116] Bryan G. Norton *Why Preserve Natural Variety?* (Princeton University Press, Princeton, 1990) at [49-50].
[117] At 50.
[118] John Muir *My First Summer in the Sierra* (The Riverside Press, Cambridge, 1911) at 110.

human and biotic communities. This is by recognizing that the function of biodiversity is essential for distinguishing biodiversity from the natural resources. Whilst natural resources include renewable and non-renewable resources, biodiversity contains genes, species and ecosystems. Life-supporting systems include purification of air and water, moderation of droughts, floods and the stabilization of climate. However, maintaining ecological resilience in healthy ecosystems is a requirement. As ecologists point out that the most significant function of interdependence of both life and non-life forms is the transformation of solar energy through photosynthesis and across ecosystems, bio-geo-chemical cycle and food webs, the roles of which are to generate the flow of energy to all life.[119] A fully physical and functional biodiversity guarantees the ecological processes that are necessary to provide such resilience to humans.[120]

10. Multilateral Environmental Agreements related Biodiversity

Since the 1970s, the existing treaties on global environment have emerged in different clusters, separating the whole environmental problem into division and sub-division. Up until now, there are almost 300 regional and global treaties dealing with natural environments from climate to the deep seabed.[121] Because there are too many of them, the terms "multilateral environmental agreements" (MEAs) refer to those various international/regional agreements.[122] MEAs are classified as a part of "global environmental governance" which is identified as "the sum of organizations, policy instruments, financing mechanisms, rules, procedures and norms that regulate the processes of global environmental protection."[123]

For the purpose of this study, those regimes will be grouped into two clusters. The first cluster is known as "the seven biodiversity-related Conventions"[124] which comprise the UN Convention on Biological Diversity 1992 (CBD), the Convention on Wetlands of International Importance, 1971, (the Ramsar), Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972 (UNSECO), The Convention on International Trade in Endangered Species, Washington, 1973 (CITES), The Convention on the Conservation of Migratory Species of Wild Animals, 1979 (CMS), The International Treaty on Plant Genetic Resources for Food and Agriculture, 2004 (IT PGFA), and The International Plant Protection

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[119] Paul R. Ehrlich, Anne H. Ehrlich, and John P. Holdren “Availability, Entropy, and the Laws of Thermodynamics” in Herman E. Daly and Kenneth N. Townsend (eds) *Valuing the Earth: Economic, Ecology, Ethics* (MIT Press, Cambridge, Mass,1993) at [69-73].

[120] Lance Gunderson and Carl Folke "Resilience 2011: Leading Transformational Change" (2011) 16 *Ecology and Society* 2, at 30.

[121] Gillespie *Conservation Biodiversity and International Law,* above 82, at [viii-xxi].

[122] UNEP "Division of Environmental law and Conventions" (2015) <www.unep.org/delc/MEAImplementationSupport/tabid/54401/Default.aspx>.

[123] UNEP "Auditing the Implementation of Multilateral Environmental Agreements (MEAs): A Primer for Auditors" (2010) <www.unep.org/delc/Portals/119/audingmeas.pdf>.

[124] CBD *Handbook of the Convention on Biological Diversity : the relationship of the Convention on Biological Diversity with the Commission on Sustainable Development and biodiversity-related conventions, other international agreements, institutions and processes of relevance* CBD/COP 4 decision IV/14 and 15 (Taylor & Francis, Eartscan, NY, 2001) at 504.

Convention, 1952, amended 2005 (IPPC). The second cluster is called "the Rio Convention"[125] including the CBD, The United Nations Framework on Climate Change, 1992 (UNFCC), and The Convention to Combat Desertification, 1994 (UNCCD). It should be noted that a connection between both clusters is the CBD.

11. The Contents

The thesis has been structured in two parts along with the introduction and conclusion. There are 6 chapters, each of which has its own introduction and summary situating in relation to the key themes of the thesis. Part I includes chapters 1-4, illustrating theoretical framework, shortcomings of state sovereignty, failed management of the old anthropocentric paradigm, and critics of international biodiversity regime. Part II comprises chapters 5-6 presenting the concept of ecological covenants and governance as an alternative solution.

Chapter 1 addresses the theoretical framework and themes based on a critical legal study to formulate the critical analysis to challenge acknowledged international customary norms of state sovereignty and the market practices that have contributed to the declining biodiversity of the earth. The two paradigms, anthropocentric and eco-centric, have been discussed in order to help with an understanding of the importance of the pros and cons of the current biodiversity regime. An effect of the concept of biodiversity for sustainable development is one of the main debates in this chapter. The key point is a discussion of the influence of the green market neoliberalism towards biodiversity for sustainable development over the past forty years. From the 1972 Stockholm conference to the Rio Summit 2012, this section shows the transformation of strong sustainable development to the weaker mode of market neoliberalism. It discusses the several impacts of weak sustainable use in terms of commoditizing biodiversity for poverty reduction without specific responsibility in terms of the high priority ecological aspect. As a consequence, the weak trend permitted consumer capitalism to overtake the seriously important factor related to biodiversity protection. In the end, this theoretical chapter introduces the transformative approach of global governance for sustainability.[126] This concept is presented as an eco-centric perspective of the paradigm-shifting development towards sustainable communities relating to the Earth Charter guidelines.[127]

Chapter 2, Divided Earth with Territorial Sovereignty, discusses the concept of boundaries and the concept of state sovereignty known as territorial sovereignty based on the assumption that the concept of territorial sovereignty has a close relationship with property theory. Territorial sovereignty is believed to be the best as a guardian to protect its own citizens and property. It is argued that territorial sovereignty is

[125] CBD "The Rio Conventions" CBD/COP/ 3 Decision III/21(1), and IV/15(13), V/21(3), VI/20(9), VII/26(1).
[126] Klaus Bosselmann, Ronald J. Engel, and Taylor Prue *Governance for Sustainability: Issues, Challenges, Successes* (IUCN, Gland, Switzerland, 2008), at 3.
[127] Klaus Bosselmann and Ronald J. Engel (eds) *The Earth Charter: A Framework for Global Governance* (KIT Publishers, Amsterdam, 2010) at [257-261].

insufficient to protect the state's biodiversity from the anthropogenic climate change and global environmental pollution. State sovereignty cannot prevent environmental risks the cause of which are from outside the boundary. However, in return the result of absolute sovereign rights to exploit over the territorial biodiversity can be intensely exercised to overuse its own territorial biodiversity. According to international tort law, the general responsibility of no-harm appearing in the Biodiversity Convention demonstrates a lack of effectiveness, so it cannot prevent state to alter the territorial biodiversity.

Chapter 3 discusses the concept of the sustainable common-property regime for governing the earth's biodiversity commons in contrast to the private property system based on statehood. It traces back to the historical roots of the enclosure movement over the commons and its impact on wildlife management. This chapter points to the misinterpretation of the "Tragedy of the Commons" that has been popularly used in resources management by many countries to transform the traditional common-resources management to the private/economic model. In terms of the global level, it is assumed that sovereignty has been exercised as similar to the private ownership over territorial biodiversity, so it is inappropriate to rely on private doctrine alone. Biodiversity consists of the character of the common goods that are beyond the reach of property interests. Bio-complexity does not fit with property characteristics. It is not clear that the values of ecological resilience and other natural life-supporting systems can certainly be captured by just territories since some of them have not been created by human labour. Humans only have rights to use, and responsibility for protecting.

Here the thesis argues that the concept of the communal property systems with sustainability based on "mutual coercion mutually agreed upon" (covenant ethic) is more appropriate. The traditional sovereign rights cannot ensure state obligations to protect it as the commons. Hence, better governance for the earth's biodiversity commons requires trusteeship and fiduciary responsibility. The instance of the trust-based approach can be found in the public trust doctrine in domestic legal practice that connects the ecological integrity of the natural environment to human health. The relationship between biodiversity decay and public health reflects environmental human rights. Since biodiversity has become a common concern of humankind, ignorance to take precautionary of activities regarding to biodiversity depletion should be considered as *erga omnes* obligation.

Chapter 4 investigates the construction of biodiversity neo-liberalism. It is argued that due to the fragmented pattern of bio-environmental regimes, neo-liberalism and sustainable productive development there is an alliance, confederation, coalition, syndicate, circle, cartel or clique aimed at taking control over the Earth's biodiversity commons. In regard to the United Nations dialogue (of the Global Compact Governance) with respect to a sustainable utilization of biodiversity, sustainable development represents the outcome of the influence of neoliberal globalization as it relates to strong economic sustainability. The CBD is the key factor of the neoliberal biodiversity conservation. This is because the CBD only has the capacity to lawfully allow biotechnological business and the green economy that require biological

resources to acquire or secure access into other treaties. It has created a link to join them all together. In as much as the CBD and its team (the Seven Conventions related biodiversity) do not seriously aim to protect the integrity of biodiversity, open access for the Biotech business tends to dominate other legal regimes. The CBD has driven the earth's biodiversity commons into the control of a few hands under the international patent regime. The side effects of the CBD's current neoliberal direction obstruct, prevent and preclude biodiversity protection. In contrast, it contrives or misleads by increasing certain kinds of 'structural violence'[128] in the sense of resource competition, monopoly and unfair trade to local communities. The violence can threaten both the health of humankind and the ecological integrity of the entire planet. Here it can be seen as the wrong turn of the UN's approach. Governing biodiversity as the earth's commons based on private property regimes is a structure of violence for human communities and biotic communities as a whole. The thesis recommends revisiting the concept of global governance for sustainability.

Chapter 5 discusses the difference of the terms contract, compact, and covenant. It traces back to the historical root of the *pacta sunt servanda*, the promise-must-be-kept, of international law that has been treated under the modern social contract theory. Whereas the earth biodiversity depletion is a common responsibility that necessitates participation from all actors, the modern social contract focuses only on states alone to join the contract and denies other groups. Because those contract parties have their own interests to preserve, there are no common duties beyond the letter of contract treaty. As a result, failure of the social contract treaty at the international level to perform their commitment is implicit in the 2012 Rio+20 Conference. So, the question that has been debated for decades leads us to determine whether the compact and covenant should be the right alternative for governing the earth commons. At the present, the UN has chosen the compact as seen in the Global Compact to join all the world businesses into the UN projects. In contrast, several groups within the civil societies around the globe seem prefer to follow the guidance of the covenant notion as delineated in the Earth Charter.

Chapter 6 addresses the eco-covenantal approach and governance. Unlike the anthropocentric social contract or compact and unlike the traditional covenant, eco-centric covenantalism applies ecological virtuous ethics and wisdom. This is in order to achieve ecological sustainability based on the best scientific information available such as planetary sciences and eco-literacy. The result may advocate environmental legal theorists at the domestic and international level to constitute an eco-covenant agreement based on common interest. Here in this final chapter the focus is on the role of the Earth Charter as a framework of the ecological covenant agreement, and its interpretative principles for global biodiversity governance. Although it has been suggested that the Earth Charter is significant for several reasons, it is necessary for the traditional covenant underpinning the Charter to be interpretative from the perspective of a more in-depth context. However, although it is undeniable that the traditional covenant of

[128] Johan Galtung "A Structural Theory of Imperialism" (1971) 8 *Journal of Peace Research* 2, at [81-117].

the Charter originates from religious sources, those religious sources hold the doctrine of nature sacred and in common, in terms of their deep symbols. This sensitive concept is very old as well as very new, as it applies to global biodiversity governance. With all respect, a barrier blocking the Charter's achievement at the universal level can be noticed in the anthropocentrism of the traditional covenant of the Charter itself.

Because the key point of the Earth Charter seeks to form a global environmental constitution, rather than to form a contractual treaty, it is necessary that the Charter should focus more concentration on protecting the earth biodiversity commons for the next generations and for the Earth itself. If the traditional covenant can integrate to eco-covenant, the Earth Charter will achieve and succeed as it is meant to. Thus, because the Earth Charter covenant aims to establish a strong bond that requires a solemn commitment linking the Earth as the deep symbol, the significance of the deeper interpretation will enable and foster better understanding. Hence this final Chapter recommends the eight eco-covenant principles relating to the Earth Charter to enhance the global governance for sustainability.

PART I

CHAPTER 1: THEORETICAL FRAMEWORK

1.1 Introduction

The core argument of thesis is that nation states fail to prevent the loss of biodiversity under the old anthropocentric statehood system because they heavily rely on an international biodiversity regime that lacks specific rules and enforcement mechanisms. Several issues will be investigated throughout this work such as state sovereignty and overuse of territorial biodiversity, domination of neoliberal market-based conservation over the earth biodiversity commons, fragmentation and weakness of these elements of Conventions related biodiversity.

Biodiversity is central to all life forms on Earth, so biodiversity depletion will cease life to exist. The concept of sustainability and ecological integrity emphasized here in this work is the core of functioning ecosystems as a primary source of environmental health for humans and other life forms. As a part of planetary boundaries,[129] the earth's biodiversity has a significant role for sustaining the biosphere that links to human wellbeing. The concept of such boundaries includes state boundaries, so there is no fragmentation in the biosphere. The interconnectedness between those boundaries points to the reformation of those fragmented regimes.[130]

Thus, it must be a time for a new approach to global governance in the name of biodiversity. This new biodiversity governance should be reaffirmed under the common heritage of humankind rather than a part of territorial sovereignty. Biodiversity should be viewed as a part of the earth commons which belongs to everyone and every life form. The theoretical framework of the thesis is based on the theme of the transformative aspects of global governance for sustainability.[131] This concept is presented taking into account an eco-centric perspective of the paradigm-shifting development towards sustainable communities with respect to the Earth Charter guidelines.[132] A key point of this transformation focuses on universal responsibility for earth ecosystems beyond the limits of territorial sovereignty. It seeks the harmonization among the collective norms between multi-participants and sets forth principles and rules based on a solemn commitment to ecological ethics to ensure self-performance for ecological sustainability.[133]

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[129] Rockström and Wijkman, above n 30, at [37-39], [44-47].
[130] Victor Galaz, Frank Biermann, Beatrice Crona, and others "'Planetary Boundaries' Exploring the Challenges for Global Environmental Governance" (2012) 4 *Environmental Sustainability* 1, 80-87, at 83.
[131] Bosselmann, Engel, and Taylor *Governance for Sustainability: Issues, Challenges, Successes* (IUCN, Gland, Switzerland, 2008), above n 126, at [3-4].
[132] Bosselmann and Engel (eds) *The Earth Charter: A Framework for Global Governance*, above 127, at [257-261].
[133] Bosselmann, Engel, and Taylor, above 126, at 3.

Here the thesis proposes an ecological covenant governance. In order to take a step forward, biodiversity for sustainability should begin with the fundamental principles as covenant to join all those participating (such as nation/states, businesses, civil societies and so on) in different aspects from local to global together. Practical achievement in terms of the way of this governance should meet the eight eco-covenant principles, comprising (1) sacred trust, (2) ecological sustainability, (3) protection of ecological integrity, (4) interdependence of biotic communities, (5) the middle-way doctrine (being in balance), (6) sufficiency (philosophy of enough), (7) planetary altruism, and (8) ecological responsibility.

In terms of the current international regimes related biodiversity,[134] enacting the ecological covenant principles as a new global covenant of biodiversity protection will not only uphold state's responsibility to their citizens and Earth, it will also ensure state's performance and enhance a global culture of ecological sustainability for long-term success.

1.2 The Central Question

Is the ecological covenant approach significant as an alternative to transform international biodiversity regimes to global governance for sustainability?

1.2.1 Is territorial sovereignty appropriate and effective as a legal instrument to prevent, protect, and restore the remnants of the earth's biodiversity?

1.2.2 Do international biodiversity regimes recognize the earth biodiversity as a fundamental concept of life or as a commodity of the States?

1.2.3 Has biodiversity neoliberalism affected the global environmental movement of sustainability over the past forty years; and if so, how has the neoliberal market dominated the CBD?

1.3 Methodology

The thesis is a cross-disciplinary research applying a critical legal study to present a critical analysis to challenge acknowledged norms or standards in legal theory and practice. It uses qualitative methods to describe the broad philosophy in both anthropocentric and eco-centric points of views. It reconciles the theoretical aspects from a review of the literature along with a critical analysis of primary and secondary documents from the disciplines of ecological ethics, environmental law, and ecology. The thesis synthesizes information from reviews of scientific literature and also couples them with the ecological wisdom of local communities and religious virtues, then evaluates the core principles of each source.

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[134] CBD "Biodiversity-related Conventions" (2015) <https://www.cbd.int/brc/>. There are seven Conventions focusing on biodiversity issues: the Convention on Biological Diversity (year of entry into force: 1993), the Convention on Conservation of Migratory Species, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (1975), the International Treaty on Plant Genetic Resources for Food and Agriculture (2004), the Ramsar Convention on Wetlands (1971), the World Heritage Convention (1972) and the International Plant Protection Convention (1952).

1.4 Assumptions of Anthropocentric and Eco-centrism related Biodiversity

The hypothesis based on eco-centric paradigm indicates that all parts of biodiversity connect to each other via its ecological function so global biodiversity governance requires an ecological holistic approach rather than a reductionistic approach. The network of life creates ecological services that support every life form in the biosphere, including *Homo sapiens*. Biodiversity has helped maintaining the natural resilience capacity that reflects on the stabilization of the climate and chemical substances related to the biosphere. As a significant part of the biosphere, the scale, size and activity of human communities have currently created significant impacts to biodiversity at both the local and global level. Anthropocentric paradigms such as political boundary, neoliberal consumerism have driven biodiversity in danger beyond the point where its ecological integrity could resiliently resist the impacts caused by the ongoing unsustainable activities of humans.

This thesis traces the philosophical roots from "anthropocentrism" to "eco-centrism."[135] These two different paradigms are very significant to the discussion in relation to international biodiversity law and governance. Both views approach the natural environment and all living things in terms of their different values and perceptions. On the one hand, anthropocentrism refers to humans regarding themselves as separate from nature, and nature as a source for human exploitation. Without the ecological wisdom from traditional religious belief systems, anthropocentrism values biodiversity as instrumental value. Traditionally, the human-centered approaches derive from techno-centrism. In this way, humans come first. Yet, on the other hand, eco-centrism recognizes that humans are deeply interconnected and dependent on nature. Emphasizing the scientific research of planetary boundaries to explain the relationship between the planet's ecosystem and its organisms as a whole supports the fundamental concept of the thesis that states humanity is an integral part of the earth's ecosystem.[136] An eco-centric scholar even claims that the earth is a community of subjects in itself and is not a collection of objects.[137] With respect to ecological ethics, some of the ecological wisdom discussed in this work is drawn by both secular and religious sources.

The theme of this work dictates an eco-centric paradigm,[138] a point of view wherein a wise animal, Homo sapiens, could be able to use the ecological consciousness to escape from the old-fashioned system of mechanical philosophy. The biodiversity is viewed as a fundamental of all life forms. The thesis attempts to integrate and interpret a wide range of eco-holistic rationalities including Deep ecology's Arne

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[135] Bosselmann, above 44, at [148-149]; and Christopher D. Stone *Earth and Other Ethics: the Case for Moral Pluralism* (Harper & Row, Publishers, 1987) at [89-90].

[136] Carl Folke, Asa Jansson, Johan Rockstrom, and others "Reconnecting to the Biosphere" (2011) *AMBIO* 40, 719-738, at 720; and Victor Galaz *Global Environmental Governance: Technology and Politics the Anthropocene Gap* (Edward Elgar Publishing, 2014).

[137] Peter D. Burdon *Earth Jurisprudence: Private Property and Earth Community* (A thesis submitted for the Degree of Doctor of Philosophy, University of Adelaide, 2011).

[138] Bill Devall and George Sessions *Deep Ecology* (G.M. Smith, 1985) at [42-43]; and Baird J. Callicott *Thinking Like a Planet* (Oxford University Press, Oxford, 2013).

Naess,[139] Gaia theory's Lovelock,[140] the Web of Life's F. Capra,[141] the Biotic Community's Leopold Aldo,[142] and other similar studies. In this work, the selected moral/ethical principles include the secular and regional beliefs or practices of Eastern, Western, and indigenous wisdoms and they are in association with modern ecological reasons. In terms of legal theory, this work promotes eco-centric-legal theory such as trusteeship, ecological justice, and universal responsibilities of care and trust based on the Earth Charter that are also part of this new approach.

1.5 The Earth Biodiversity Governance in Debate

Failure to meet the 2010 biodiversity target[143] revealed that the global biodiversity depletion has gone beyond the capacity of individual nation states to handle. It implies the paradigm shift in the state based governance. It is well known that governing the earth biodiversity commons has traditionally been placed in the hands of the independent State under the state sovereignty.[144] Nation states alone have sovereign rights to manage their biodiversity.[145]

Fear of losing their benefits from biological resources has attracted States' attention to secure their biological property. After several decades of free-market and globalization, a power of the world market and economic incentives based marketing of biodiversity has been transcendent over the sovereignty of nation states. Although the MA 2005 had recommended that to ensure the sustainable management of ecosystem services needs to overcome market failures and the misalignment of economic incentives,[146] the economic incentives of biodiversity conservation seemed to be a highlight of the 1992 Biodiversity Convention.[147] A deal between State/Nation and the world market was successfully done in negotiation and the rules were set as seen in the 2010 Nagoya Protocol.

From neoliberal perspectives, it is believed that the privatization of the Commons can make people become good custodians of their own allocations and may prevent harms to their own property.[148] The neoliberal dialogue stems from Garrett Hardin's "Tragedy of the Commons" (Hardin, 1968) pointing out

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[139] Arne Naess, Alan R. Dregson and Bill Devall *Ecology of Wisdom Writings by Arne Naess* (Berkeley, Counterpoint, 2008).
[140] Lovelock *the Vanishing Face of Gaia: a Final Warning,* above 83.
[141] Capra, above 84, at [36-37].
[142] Aldo Leopold *A Sand County Almanac and other Writings on Ecology and Conservation* (New York, Library of America, 2013).
[143] CBD *Global Biodiversity Outlook 3* (Montreal, CBD, 2010) at 83.
[144] CBD Article 3.
[145] Subrata Roy Chowdhury "Permanent Sovereignty over Natural Resources" in Kamal Hossain and Subrata Roy Chowdhury (eds) *Permanent Sovereignty over Natural Resources in International Law: Principle and Practice* (Frances Pinter, New York, 1984) at [1-5].
[146] Millennium Ecosystem Assessment, above n 3, at [20-21].
[147] Patrick Ten Brink *the Economics of Ecosystems and Biodiversity in National and International Policy Making* (Earthscan, London, 2011).
[148] Timothy M. Swanson *Global Action for Biodiversity: An International Framework for Implementing the Convention on Biological Diversity* (Earthscan, London, 1997).

that the Commons must be regulated. Hardin's assumption entailed that a regime of private property rights would only be a proper alternative to deal with the tragedy. Under this structure, the commons must be regulated, before it was ruined. It is presumed that poverty contributes to the loss of biodiversity, so biodiversity conservation is linked to poverty elimination.[149] Unfortunately, many of the biodiversity hotspot countries are in developing South nations and it is protected by state sovereignty. Although it becomes a common responsibility of the North/South to cooperate in the global biodiversity protection, the South needs to exploit biological resources in order to carry out economic development. Because there is a high cost of biodiversity management, the South requires financial/technological aid to achieve the conservation activities. At this point, the North encountered the dilemma. On one hand, it is too great a responsibility for them to spend their own funds for the purpose of protecting another's property. On the other hand, it is a common duty. The tradeoff approach between the State owner and the Biotech-Market has existed at this stage. It is true that biodiversity contained both intrinsic and instrumental values, so the South should monetize some of them to the North. This was the main reason the biotechnological approach appeared in the CBD. Under this market approach related to plants and their genetic resources, the foreign companies that fund the conservation project in developing countries for commercial purposes may be protected by international investment law.[150] The serious legal issue is that in a process of bio-prospecting, the said company may be involved in bio-piracy against the willingness of the local indigenous people who lacks of authority to protect their own traditional knowledge. Then if biotic compound is used, the new product may be patentable by intellectual property law[151]. At the end, the process may be secured by contract agreement between business and state government.

Scholars argue in regard to the opponent's views that "the tendency towards the domination of nature is continued in a new and even stronger form."[152] Several terms are used to highlight this market dialogue such as "neoliberal nature" and "neoliberal biodiversity conservation".[153] It is clear that this global project

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[149] CBD "Linking Biodiversity Conservation and Poverty Alleviation: A State of Knowledge Review" (20 April 2013) CBD Technical Series No: 55, 2010 <www.cbd.int/doc/publications/cbd-ts-55-en.pdf>.

[150] Valentina Sara Vadi "Through the Looking-Glass: International Investment Law through the Lens of a Property Theory" (2011) 8 *MJIEL* 3, at 22; and John G. Simon, Charles W. Powers and Jon P. Gunnemann *the Ethical Investor; Universities and Corporate Responsibility* (Yale University Press, New Haven, 1972) at 103; and George Kassinis "the value of Marketing Stakeholders" in Pratima Bansal and Andrew J. Hoffman (eds) *the Oxford Hnadbook of Business and the Natural Environment* (Oxford Handbooks Online, 2012).

[151] Swanson *Global Action for Biodiversity*, above n 49, at [151-152]; and Timothy Swanson *Intellectual Property Rights and Biodiversity Conservation* (Cambridge University Press, Cambridge, 1995).

[152] Brand Ulrich, Christoph Görg , Hirsch Joachim, and Wissen Markus *Conflicts in Environmental Regulation and the Intenatinalisation of the State* (Routledge, London, 2008) at 13.

[153] Karen Bakker "The Limits of 'Neoliberal Natures': Debating Green Neoliberalism" (2010) 34 *Progress in Human Geography* 6, 715, at [715-176]; Bram Büscher, Sian Sullivan, Katja Neves, Jim Igoe & Dan Brockington "Towards a Synthesized Critique of Neoliberal Biodiversity Conservation" (2012) 23 *Capitalism Nature Socialism* 2, [4-30]; Kemi Fuentes-George "Neoliberalism, Environmental Justice, and the Convention on Biological Diversity: How Problematizing the Commodification of Nature Affects Regime Effectiveness" (2013) 13 *Global Environmental Politics* 4, at [144-163].

of financing for biodiversity has operated via the CBD mechanism.[154] So, those who support economic incentives claim that the traditional biodiversity conservation (in-situ and ex-situ conservation) has lifted the status from the way in which biodiversity is overexploited by the expansion of economic growth to how biodiversity could be saved by the expansion of market and trade measures.[155] Thus, the integrity of nature could monetize and trade for services that ecosystems provide for. However, it is necessary to note that those who could control the market and trade would be those who have such influence to control and govern the earth's biodiversity commons. However, the risk of biodiversity neoliberalism is very high. This is because it offers the short-term solution by motivation on exploitation of biodiversity as an unlimited resource for supporting the demand of consumer capitalism.[156] Ulrich Brand and his colleagues (2008) refer to this incentive trend as the "regulation of nature in "post-Fordism"[157] in other words, the capitalization of biodiversity or bio-capitalism.[158] Their argument points out that under biodiversity neoliberalism, the global networks of transnational companies can lead to the potential dissolution of the borders of the international economies over domestic markets. The consequence of market dominance will increase the independence of multinational corporations to have influence to regulate environmental legislation and social compromises of individual states. At this point, the rights of indigenous people and farmer rights would be possibly violated.[159]

At the present, it is clear that the State/Nations are not able to resist the neoliberal market to halt the abuse of the earth commons. Under the process of "the Market enclosure",[160] the Lockean private property theory, and Hobbes's social contract, the nation states and the agricultural-biotech enterprises associate to frame the Commons.[161] By the sovereign power of the state and the capacity of biotechnology the agreement of shared benefits from biodiversity gains are acceptable (the 2010 Nagoya Protocol).[162] A clear example can be seen in "a tragedy of enclosure" in the case of mangroves vs. Shrimp farming over the globe.[163] The compromise of preventing biodiversity loss occurs between the State owner and the Biotech-Market in a fashion of the win-win solution claim success on creating a new job, making more products, and growing the economy. However, without considering the market failure,[164]

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[154] Claudia Ituarte-Lima, Maria Schultz, Thomas Hahn, and others *Biodiversity Financing and Safeguards: Lessons Learned and Proposed Guidelines* UNEP/CBD/COP/12/INF/27 (2014).
[155] CBD "Economic, Trade, and Incentive Measures" (12 October 2015) <www.cbd.int/incentives>.
[156] Bram Büscher, Sian Sullivan, Katja Neves, Jim Igoe & Dan Brockington "Towards a Synthesized Critique of Neoliberal Biodiversity Conservation" (2012) 23 *Capitalism Nature Socialism* 2, [4-30] at 4.
[157] Ulrich, Görg , Joachim, and Markus *Conflicts in Environmental Regulation and the Intenatinalisation of the State*, above 152, at [9-22].
[158] At [23-25].
[159] At 106.
[160] Burns H. Weston and David Bollier *Green Governance: Ecological Survival, Human Rights, and the Law of the Commons* (Cambridge, Cambridge University Press, 2013) at [3-5].
[161] At [129-130].
[162] At 130.
[163] Joan Martinez-Alier *the Environmentalism of the Poor* (UNRISD, Geneva, 2002) at [25-29].
[164] Jan G. Laitus *Natural Resources Law* (WestGroup, St. Paul, 2002) at [15-18].

the biotech-market incentives just provide the short-term for economic growth, but disregard the middle term of poverty elimination and disrespect the long-term ecological protection.[165]

There are three key actors in this biotic-market governance; that is, the State, the Market, and the Biodiversity Institution. The first actor who takes control over biodiversity is the State owner who absolutely claims territorial sovereignty to manage its own biodiversity. The Market is the second actor referring to the multinational agriculture/aquaculture businesses. Thirdly, the international biodiversity regime that serves as middleman sets forth the negotiated rules and policies. Negotiated rules and policies are set for benefits between the State and the Biotech-Market to trade biological products. In terms of the knowledge, the business is protected by Intellectual Property Regimes. There are no serious legal obligations given by the 1992 Biodiversity Convention in a case of environmental harms caused by genetic modified organism released rather than general responsibility of the general tort law. The result of GMO released will cause very high risk to nature. In this circumstance, the compromise between the State and the Market will contribute to ecological deletion, and is unfair and unjust to local communities.

As discussed above, it is argued that Garret Hardin's scenario of the Commons was a misconception between open-access governance, a free of use, and the commons governance. Burns Weston and David Bollier (2013) point out that in the traditional commons management, the common goods is not free of use, it has limits, rules, social norms, and enforcement against the free-riders. The commons regulates via a community council to act as a steward of shared resources.[166] Thus, a misrepresentation of Hardin's and his interpretation of the real commons has been used by neo-liberal markets to support their arguments.[167] As a result, it has led to the failed paradigm of the earth's biodiversity commons. The UN Convention on Biological Diversity, 1992 should be counted as a result of Hardin's falsification of the Commons and a product of neoliberal market system.

1.6 The Shortcomings of the Existing International Biodiversity Regimes

1.6.1 The first fault of the CBD is a refutation of biodiversity as the commons, by accepting territorial sovereignty without a special responsibility. It is argued that territorial sovereignty has created the fragmented geographical boundaries.[168] Based on modern scientific insights, biodiversity is a part of the planetary boundaries.[169] The earth's biodiversity whether located within or without state boundaries facilitates and generates natural chemical nutrients through the earth's biogeochemical cycles.[170] The environmental flow travels across boundaries and connects territorial biodiversity to the larger biosphere

[165] Weston and Bollier *Green Governance,* above n 160, at 130.
[166] At [146-147].
[167] At 147.
[168] Asselt Van Harro *The Fragmentation of Global Climate Change: Consequence and Management of Regime Interactions* (Edward Elgar, Cheltenham, 2014) at [35-39].
[169] Rockström and Wijkman *Bankrupting Nature Denying our Planetary Boundaries,* above n 30, at [44-47].
[170] at 46.

and the oceans. These natural elements cannot be certainly captured or owned under the political boundaries or the law of humans.

Arguably, state sovereignty as a guardian was a myth of Westphalia sovereignty under fear of "the state of nature" that was once believed was the best to protect its own citizens and property.[171] As such this argument has become the classical obstacle against the global interests. Yet, it is evident that territorial sovereignty is insufficient to protect the state's biodiversity from the anthropogenic climate change and global environmental pollution.[172] Under the new era of the Anthropocene,[173] state/nations cannot establish the absolute sovereignty as the *default position*[174] over protection of the earth biodiversity commons. On the other hand, absolute sovereign rights to exploit over the territorial biodiversity can be used to abuse its own biodiversity.[175]

However, the 1992 UN Convention on Biological Diversity (CBD) denies that the earth's biodiversity should belong to the world (Earth).[176] A customary legal principle of community of interest(s) to preserve the earth commons for the future generations was decimated.[177] And also a strong legal sense of common heritage principle was devalued to the common concerns of humankind.[178] On the other hand, the Regime reaffirmed state sovereignty with sovereign rights over its natural resources and mere responsibility of no-harm to the environment of other states.[179]

Territorial sovereignty covers diverse species, genes, and ecosystems in a vertical and horizontal scale above and beneath the state jurisdiction, including a 200 nautical mile exclusive economic zone for exploitation.[180] Since the time of Westphalia, the result of a political boundary line nevertheless aims to separate the earth's biodiversity to individual nation states. In order to offer a direct challenge to

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[171] David Miller and Hashmi H. Sohail *Boundaries and Justice: Diverse Ethical Perspectives* (Princeton University Press, Princeton, 2001) at [3-6].
[172] Niko Schrijver "The Dynamics of Sovereignty in a Changing World" in Konrad Ginther, Erik Denters and Paul Jim de Waart (eds) *Sustainable Development and Good Governance* (Kluwer Law International, London, 1995) at [80-89].
[173] Louis J. Kotzé and Thilo Marauhn (eds) *Transboundary Governance of Biodiversity* (Martinus Nijhoff, Leiden, 2014) at 15.
[174] Bradly J. Condon *Environmental Sovereignty and the WTO Trade Sanctions and International Law* (Transnational Publishers, Ardsley, 2006) at 232.
[175] Adalheidur Jóhannsdóttir *The Significance of Default: A Study in Environmental Law Methodology with Emphasis on Ecological Sustainability and International Biodiversity Law*, (PhD, Uppsala University, 2009) at [203-207].
[176] Guruswamy D. Lakshman and Jeffrey A. McNeely *Protection of Global Biodiversity: Converging Strategies* (Duke University Press, Durham, 1998).
[177] Simone Bilderbeek, Ankie Wijgerde, and Netty Van Schaik (eds) *Biodiversity and International Law: the Effectiveness of International Environmental Law* (IOS Press, Amsterdam, 1992).
[178] CBD, At Preamble.
[179] CBD, Article 3.
[180] Peter Malanczuk and Michael Barton Akehurst *Akehurst's Modern Introductions to International law* (7th ed., Routledge, New York, 1997) at [75-90]; and Ian Brownlie *Principles of Public International Law* (7th ed., Oxford University Press, Oxford, 2008) at [178-80].

sovereignty, it is necessary to look at the role of property doctrine and the way it interplays with territorial sovereignty.

It is argued that a sovereign state often applies property rights doctrine as a legal measure to manage state's territory,[181] so sovereignty based on territoriality is relative to property doctrine.[182] Under the protection of property rights, which are well recognized by civilized nations, the general principle of international law uses the domestic legal conception in so far as property regime can apply to international law.[183] Due to the fact that there is no single international law relating to property *per se*, it does not signify property doctrine will not be relevant to the general principle of international law. Scholars point to "the sovereignty based territoriality."[184] Richard Barnes (2009) observes that in terms of the two functions of property doctrine involved with territorial sovereignty, these include the private and public functions.[185]

This argument traces back to Locke's theory of private property rights. According to Morris R. Cohen and Felix S. Cohen, such myth that "property is exclusive in its nature and is not absolute" is a misinterpretation of the Roman language.[186] The original text is "*Dominium est jus utendi et abutendi re*."[187] This was interpreted as the right of property carrying with the right to use or to abuse a thing. With this having been misleading, it turns to the claim that the property is the right to use or misuse or even makes a bad use of the belongings. For Cohen, *abutendi* needs to be narrowly interpreted which means to use or consume a thing, not to abuse it.[188] These commentators affirm that although the property right is still exclusive, it is not absolute, so the exclusive right of property is not a right without limitations or qualifications. B.H. Weston and D. Bollier affirm that the usual omitted interpretation of Locke's private property theory is the quality of such right as Locke stated that any private parts are limited to "at least where there is enough, and as good, left in common for others."[189]

If private property has two sides, the individual and the social side,[190] state sovereignty should be similar. So, while the private functions focus on the claim of private rights to all things and against all other States

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[181] Richard Barnes *Property Rights and Natural Resources* (Hart Publishing, Oxford, 2009) at 222; and Cotula Lorenzo *Property Rights, Negotiation Power, and Foreign Investment: An International and Comparative Law Study on Africa,* (PhD, University of Edinburgh, 2009).
[182] Barnes *Property Rights and Natural Resources* above n 181, at 223.
[183] Valentina Sara Vadi "Through the Looking-Glass: International Investment Law through the Lens of a Property Theory", above 150, at 27.
[184] Barnes, above n 181, at [222-223].
[185] At [14-17], [21-61], [63-112],[152-155].
[186] Morris R. Cohen and Felix S. Cohen *Reading in Jurisprudence and Legal Philosophy in Volume 1* (Beard Books, 2002) at [29-30].
[187] At 29.
[188] At 30.
[189] Weston and Bollier, above 160, at 128.
[190] Morris R. Cohen and Felix S. Cohen *Reading in Jurisprudence and Legal Philosophy in Volume 1*, above 58, at 30.

within a jurisdiction, the public function describes those property associations that are relevant in terms of certain public or community interest(s).[191] Although the public function has been recognized in international law, it is poorly activated. The scholars say that it is "ill-suited" because of an inappropriate burden of proof, procedure of international tort law, and non-countervailing rights from others, even though the public function is acknowledged such as the no-harm doctrine. [192]

1.6.2 State Responsibility and *Erga Omnes* Obligations

The second shortcoming is state responsibility of Article 3 of the CBD is too general. B.H. Weston and D. Bollier argue that the burden of legal claims for biodiversity/ecosystem losses contributing global trans-boundary harms needs to shift from the individual victims to the State.[193] Dinah Shelton as cited in Weston and Bollier (2013) also argues that if the State claims its full-sovereignty, such State should be compelled in terms of specific obligation to protect the natural environment of its inhabitants.[194] In order to seek the stronger responsibility, they attempt to link state responsibility with human rights. According to the UN's statement, "sovereignty no longer exclusively protects States from foreign interference; it is a charge of responsibility that holds States accountable for the welfare of their people."[195] The scholars state that a sovereignty as the responsibility of State to protect the citizen from extreme trans-boundary damage should be addressed in respect of Responsibility to Protect.[196]

In the CBD's text, biodiversity is defined as similar as biological resources.[197] By emphasizing biodiversity as commodity, rather than a primary source of life the treaty justifies unchecked private exploitation of the state. Without a specific obligation, there are no warrantees State will in an ecologically friendly fashion exploit the biodiversity. As discussed above, the extreme interpretation of exclusive sovereign right could lead States to overuse their resources or even to destroy them.[198] This concern links to the five main threats to biodiversity as mentioned above[199], seeking stronger responsibility of State to protect biodiversity. This is simply because the cost of the ecological destruction has a negative impact on human's health according to the consequences of the global environmental harms.[200] It is widely acknowledged among scientific communities that climate change/global warming over the past decades

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[191] At 112.
[192] Prue Taylor *An Ecological Approach to International Law* (Routedge, London, NY, 1998) at 118.
[193] Weston and Bollier*,* above 160, at [84-85].
[194] At 84.
[195] UN "The Responsibility to Protect" (14 Oct 2015) <www.un.org/en/preventgenocide/adviser/responsibility.shtml>.
[196] Weston and Bollier, above 160, at [84-85].
[197] CBD, Article 1.
[198] Jóhannsdóttir *The Significance of Default,* above 175, at [203-207]; and Adalheidur Jóhannsdóttir "The Convention on Biological Diversity: Supporting Ecological Sustainability or Prolonging Denial" (2010) 1 *Nordic Environmental Law Journal*, at [81-102].
[199] CBD, *Global Biodiversity Outlook 3* (Montreal, CBD, 2010) at 9, 55.
[200] Michael Mason *The New Accountability:* Environmental Responsibility Across Borders (Earthscan, London, 2005) at 8; and Jeanne X. Kasperson and Roger E. Kaspenson "Border Crossings" in Kasperson J.X. and Kaspenson R.E (eds) *The Social Contours of Risk: Volume II, Risk Analysis, Corporation & the Globalization of Risk* (Earthscan, London, 2005) at [217-248].

has been contributed to by human activities.[201] The negative impacts have therefore rebounded in a case of the Hurricane Katrina, or Fukushima's tsunami. The scientific ability to predict can counsel the state authority to make a decision to prevent potential harms. So, governments who have failed or ignored to take precautionary actions may face accountability to the victims.[202]

Thus, it raises the question of *jus cognes*. A radical point has been made that ignorance to prevent ecological/biotic degradation could be alleged as a crime against humanity,[203] because the impact affects humanity in general. Protecting biodiversity is recognized as a "common concern of humankinds"[204] which should be considered under the character of peremptory norms of international law. Because international law is viewed as "a legal system"[205], norms and principles have meaningful relationships between them. Thus, they can be treated as having higher and lower hierarchical levels.[206] Their expression may involve greater or lesser generalization and specificity and their weight may date back to earlier or later moments in time.[207] Based on this 2006 International Law Commission Report, it can be assumed that the norms adopted to protect the global commons for the security of humanity should be treated as virtual norms, rather than treating on a particular norm as absolute concerning the individual rights of states. It can be seen in *Barcelona v. Traction, Light and Power Co., Ltd (Belgium v. Spain)*.[208]

Regarding biodiversity as the primary sources of all living things, when the state's activities conduct significant threats to its territorial biodiversity, it violates its erga omnes obligations under the jus cogens. Such violations cause conflicts to the long-term interests of the international community in preventing global environmental harms. Laura Westra has cited with the term "eco-violence" (2004).[209] The reason for this is because nations/states as international community have received reliable information based on the best scientific evidence. They must take the responsibility and have the capability to predict the harms according to reasonable knowledge. If the state insists on claiming absolute sovereignty and abuses its own sources causing global environmental harms, State could not have legitimacy to deny its liability to human health. Thus, the state should face the *erga omnes obligation*s.

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[201] NASA, Global Climate Change "Scientific Consensus: Earth's Climate is Warming" (14 Oct 2015) <http://climate.nasa.gov/scientific-consensus>.
[202] Weston and Bollier*,* above 160, at [84-85].
[203] Laura Westra "Environmental Rights and Human Rights: The Final Enclosure Movement" in Roger Brownsword (ed) *Human Rights* (Hart, Oxford, 2004) at [107-119].
[204] CBD, at Preamble.
[205] *International Law Commission, the Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International Law* [2006] vol II, YILC, Part Two, Chapter X, at [111-119].
[206] *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International law* UNGA/CN.4/L.682 (2006) at [40, 47-48].
[207]Polly Higgins *Eradicating Ecocide*: Laws and Governance to Prevent the Destruction of Our Planet (Shepheard-Walwyn, 2010) at [65-67].
[208] *Barcelona v. Traction, Light and Power Co., Ltd (Belgium v. Spain)* [1970] ICJ Rep 1.
[209] Laura Westra *Environmental Justices & The Rights of Indigenous People: International and Domestic Legal Perspectives* (Earthscan, Sterling, VA, 2008) at [24-25], [313-315].

Another significant issue focuses on the unsustainable development between the Market enclosure's activities (privatizing biodiversity, monoculture, and GDP) and the five main threats of biodiversity losses that contribute to rights to food,[210] right of access to water,[211] and right to a healthy environment.[212] Regarding right to food, the increase in the world population reflects on the demand for food security.[213] While the market-based incentives can increase the raw materials to the world food market, they can also contribute to rural people converting pristine forests into monoculture activities.[214] Such activities create an imbalance and unfair trade in the food market.[215] While the biological resources are affected by deforestation, and global environmental damages, controlling the seed market or food products via patent regimes can advantage a few of the agricultural companies to control the food price. Its consequence can cause food insecurity and insufficient import capacity that can threat the right to food.[216] Similar to the right of food, commodification of the water commons means (whether in ground water or surface water) the limitation of access to water; it can violate the right to have access to water. It is believed that the free-market based on privatization will be able to advance the quality of products and services because of market competition and efficiency. However, today's globalizing market cooperation can result in market dominance on prices, and inequalities.[217] There is a growing concern that the right to have access to safe drinking water and sanitation should be treated as a matter of human rights.[218]

The right to live in a healthy environment is clearly upheld in Article 12 of the ICESCR, and Article 17 of the Universal Declaration on Bioethics and Human Rights, 2005.[219] As mentioned, biodiversity loss and human health is linked. Depletion of biodiversity and ecosystem services to control the insect vectors can cause spread of infection diseases to vulnerable persons. The outbreak of serious diseases shows the potential of new threats to humanity.

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[210] The UDHR, Article 25 and The ICESCR, Article 11.

[211] Linda Hajjar Leib *Human Rights and the Environment: Philosophical, Theoretical, and Legal Perspectives* (Martinus Nijhoff Publishers, Leiden, 2011 at [144-145].

[212] Maud Huynen and Pim Martens "Linkages among Globalization, Human Rights and Health" in Colin L. Soskolne in *Sustaining Life on Earth* (Rowman& Littlefield Publishers, Lanham, 2008) at [70-71]; and Leib *Human Rights and the Environment,* above n 211, at [143-155].

[213] David Pimentel and Marcia Pimentel "The Future: World Population and Food Security" in Colin L. Soskolne (ed) *Sustaining Life on Earth* (Rowman& Littlefield Publishers, Lanham, 2008) at [285-295].

[214] Muhammad Ibrahim, Roberto Porro, and Rogerio Martines Mauricio "Deforestation and Livestock Expansion in the Brazilian Legal Amazon and Costa Rica: Drives, Environmental Degradation, and Policies for Sustainable Land Management" in Pierre Gerber, Harold A. Mooney, and others (ed) *Livestock in a Changing Landscape: Volume 2: Experiences and Regional Perspectives* (Island Press, Washington, 2010) at [74-82].

[215] Maud Huynen and Pim Martens "Linkages among Globalization, Human Rights and Health" in Colin L. Soskolne (ed) *Sustaining Life on Earth* (Rowman& Littlefield Publishers, Lanham, 2008) at [74-75].

[216] At 74.

[217] At 75.

[218] *Human Rights and Access to Water,* UNHRC, UN Doc A/HRC/2/L.3/Rev.3 (2006); and Leib, above n 211, at 145.

[219] See, Article 17 of the Universal Declaration on Bioethics and Human Rights, 2005: Due regard is to be given to the interconnection between human beings and other forms of life, to the importance of appropriate access and utilization of biological and genetic resources, to respect for traditional knowledge and to the role of human beings in the protection of the environment, the biosphere and biodiversity.

Since biodiversity decline is connected to human health, it reflects a pivotal issue of environmental human rights. A clean, healthy, biological diverse environment is a part of human rights.[220] B. Weston and D. Bollier (2013) present three strong reasons human rights are linked to biodiversity loss. Firstly, there has been a tendency that environmental human rights can gain legal legitimacy in international law-making and potential enforcement.[221] Secondly, such rights are addressed in the domestic constitution in many countries. Thirdly, human rights imply a public command for human dignity that can make a demand on state sovereignty and challenge the private market elites.[222]

1.6.3 Will Biodiversity be a Source for Sustainable Development?

The third fault is the CBD creates the dangerous links between biodiversity, sustainable development ("SD") for market neoliberalism.[223] SD is still an important principle as long as it can maintain its own three aspects (economic development, social justice, and environmental protection) in balance.[224] Here it is argued because the three are interlocked, so if the momentum of imbalance happens SD's goals will surely not be able to be achieved. There are two significant factors involved in this unevenness in terms of the number of humans throughout the world and human overconsumption.

Firstly, today's trend of the world's population growth increases dramatically. According to the UN world population program reports that the current world population is close to 7 billion and could reach 10 billion by 2100.[225] The connection between the large-scale growth in human population and human activities affects and threatens the loss of biodiversity and the finite biosphere. Paul Ehrlich has addressed the topic of population growth since 1968 in his book, *The Population Bomb*.[226] When population in size has increased dramatically in many countries, demands on utilizing biological resources are potentially large. In developing countries, the demand for basic needs links to consumption and resource exploitation. In industrial nations, they increase its productivity by promoting economic growth, accessing GHGs to atmosphere. Those that are growing too large threaten the limits of biodiversity and the biosphere. The consequences of humans reproducing and eating are interrelated. As we saw this relation in the Club of

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[220] Weston and Bollier, above 160, at [28-29].
[221] At 28
[222] At 29.
[223] CBD "Biodiversity for Development" (15 October 2015) <https://cbd.int/development>; and Thomas Hahn, Claudia Ituarte-Lima, Constance McDermott, and others "Commodification motives and degrees: the CBD objectives may benefit from using price signals as incentives but not from pricing ecosystem services or financialisation" (12 May 2014) <www.cbd.int/doc/meetings/fin/ds-fb-02/other/ds-fb-02-presentation-00-en.pdf>;
and Claudia Ituarte-Lima, Maria Schultz, Thomas Hahn and Sarah Cornell *Biodiversity Financing and Safeguards: Lessons Learned and Proposed Voluntary Guidelines--Revised and Expanded Version of Discussions Papers on Safeguards UNEP/CBD/COP/11/INF/7 and UNEP/CBD/WGRI/5/INF/7* (Stockholm Resilience Centre, 2014).
[224] W.M. Adams *the Future of Sustainability: Re-thinking Environment and Development in the Twenty-First Century* (IUCN, 2006) at [3-9].
[225] UN, "World Population Prospects: The 2010 Revision, Press Release" (3 May 2011) <http://esa.un.org/unpd/wpp/>.
[226] Paul R Ehrlich *the Population Bomb* (Ballantine Books, New York 1968).

Rome's report *Limits to Growth, 1972,* analyzes how growth interacts with finite resources, and expressed concerns over the environmental harm caused by ongoing population growth, wasteful resource consumption, and poverty.[227]

Eugene Odem argues that human societies are a subsystem of the biosphere system. Their ability to grow is limited by the physical limits of the ecosystem. Human growth in numbers and activities are relative to those ecosystem limits.[228] Odem describes that in any pattern of the growth forms can be limited. For the human individual, our body stops growing when it reaches at adulthood, which is determined by genetic makeup. But, for populations and ecosystems the limit is the carrying capacity of earth's system, which is the size that can be sustained at a given time and place.[229] In the past, the population number and scale of activities was small relative to take the negative impact in terms of the earth's carry capacity in physically natural resources, gaseous membranes and energy flow. However, things change. Today's human activities are different.

Secondly, it seems that the consumptive lifestyle of our modern society is also unstoppable. The need to consume has been around our society for millennia. Consumption has evolved since humans have wisely found ways to help make their livelihood more comfortable and convenient by utilizing/adjusting their surrounding resources.[230] However, human's ability and the need to consume have changed their ways. The transformation of consumption from a means of meeting needs into a way of *"acquiring an identity"* has been underway for some decades, but it shifted into a new and more intense phase from the early 1990s.[231] The shift from a "production society" to a "consumption society" makes the task of persuading citizens of affluent countries to change their behavior in response to the natural degradation more intractable, because of the "psychological meaning of the consumption process."[232] This shift has been reflected in a change in the nature of companies and a change in the nature of the consumer.[233]

So, if consumption is referred to as a state of temporarily mental preferences and it gives maximum emphasis on optimum utilization of available resources both natural and human-made,[234] it should be argued that when consumption links to any kinds of resources, its popularity may go against preservation

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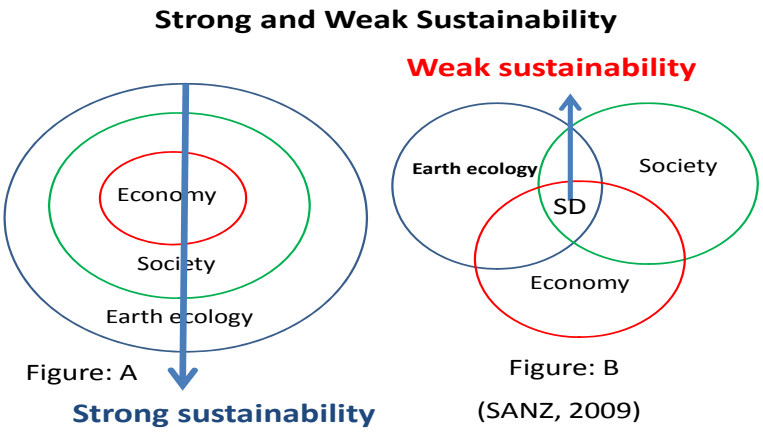
[227] Paul Neurath *From Malthus to the Club of Rome and Back: Problems of Limits to Growth, Population Control, and Migrations* (M.E. Sharpe, Armonk, 1994).
[228] Eugene Odum *Ecological Vignettes: Ecological Approaches to Dealing with Human Predicaments* (Harwood Academic Publishers, Amsterdam, 1998) at [1-7].
[229] At 7.
[230] Neil McKendrick, John Brewer, and John H. Plumb *The Birth of a Consumer Society: the Commercialization of 18th England* (Indiana University Press, Bloomington 1982).
[231] Clive Hamilton "Consumerism, Self-Creation and Prospects for A New Ecological Consciousness" (2010) 18 *Journal of Cleaner Production* at [571-575]; and Jeong Ho-Won, Globalization and the Physical Environment (Chelsea House Publishers, Philadelphia 2006).
[232] Clive Hamilton *Requiem for a Species: Why We Resist the Truth about Climate Change* (Earthscan, Washington, DC, 2010).
[233] Clive Hamilton "Consumerism, Self-creation and Prospects for A New Ecological Consciousness" (2010) 18 *Journal of Cleaner Production* at 571.
[234] Mark Sagoff *the Economy of the Earth* (Cambridge University Press, 1998) at [52-54].

or protection of available natural resources. [235] Today's consumption becomes a key to the economic growth that is increasingly accelerating the rate of the biological resource base.[236] The dynamics of consumption raises the needs and desires for materials in consumers. While insufficient desire drives consumers to have more and more beyond their basic needs, it is against the ecological reality that the earth commons is finite. So, the strong approach for protecting environment is simply ignored.

Beside the looseness of the definition of SD, a couple critiques of sustainable development have been made by W.M. Adams pointing out the ineffectiveness of sustainable development that results from the problems of trade-off.[237] As Adams points out "strong sustainability refers to trade-offs that are not allowed or are restricted."[238] In contrast, the weak model is used to describe the compromise of ecological protection. Bosselmann argues that SD has lost its core strong points, the ecological sustainability.[239] It distinguishes the different standpoints of SD and sustainability in two models, called weak and strong sustainability.[240] In pattern and purpose both are different. In terms of the Weak model, it assumes that the stance of the three pillars (economic, social, and environment elements) is equal, whereas the Strong model demonstrates the hierarchal form. According to scholars, the strong one referred to as "the nested egg" is illustrated on figure A. Figure B represents the "interlocking circles" as a weak sustainability. Whilst, as we can see, the three sectors are integrated in a different approach in terms of anthropocentric and eco-centric, the results will be different.



[Figure 1: Strong and Weak Sustainability]

[235] Paul Ekins "The Sustainable Consumer Society: A Contradiction in Terms?" (1991) 3 *INT'L ENVT'L AFFAIRS*, 4 at [242-57].
[236] Peter N Stearns *Consumerism in World History: the Global Transformation of Desire* (2nd ed., Routledge, New York, 2006).
[237] W.M. Adams *the Future of Sustainability: Re-thinking Environment and Development in the Twenty-First,* above 96, at [3-9].
[238] At 3.
[239] Klaus Bosselmann "The Concept of Sustainable Development" in Bosselmann K. and Grinlinton D.P. (eds) *Environmental Law for a Sustainable Society*, (NZCEL, 2002) at 91.
[240] At 91.

The weak model shows that essentially the three circles are equally balanced. Three of them depend on the same source for their own maintenance; that is the earth's resources. For example, the economy is reliant on raw materials for its productivity. Society also depends on air, soil and water from nature as much as ecology is a part of earth's biosphere. The possible achievement of the weak SD depends on how to maintain the three circles in an equal quantity and quality so that one particular circle does not take precedence over the other. Otherwise, the environmental circle would not be adequate to serve society and the economy. In fact, economic growth is linked to human consumption and society refers to human population that is unstoppable. Hence, in reality, if SD requires success, it needs to limit both said factors. However, it is impossible because the growth of global population is limitless; the aim of SD is hardly accomplished. At the present, the pattern of SD addresses a sustainable economy (further discussion follows).

1.6.4 Influences of Neoliberal Biodiversity Over Forty Years

Again, the concept of neoliberal biodiversity is a new way of speaking about the enclosure in reference to the earth's biodiversity commons. In the 21st century the hegemonic regime no longer includes the elites or the Crown, rather it is a group of powerful nation states, central banks, international nongovernmental organizations, international governmental organizations, multinational corporations, international financial institutions, and free trade agreements.[241] It is argued that neoliberal economic globalization based upon the massive demand for biological resources has possibly eroded the ability of governments to uphold environmental standards (such as bio-security law), and weakened domestic environmental law in favor of achieving its own interests. Currently, the growing awareness of threats of neoliberal biodiversity can be seen in the Trans-Pacific Partnership Agreement (TPPA) and the Free-Trade Agreement (FTA) phenomena, particularly in local agricultural and pharmaceutical industrials.[242]

From the lessons of "pink gold" of shrimp farming[243] to the "green gold" of genetic products,[244] neoliberal dialogue towards biodiversity for economic development has never changed its pattern. Jim Igoe uses the terms "neoliberal conservation" to express the tension of capitalist expansion to biodiversity conservation.[245] Basically, the neoliberal biodiversity involves political ideologies in association with market based measures; it espouses commodification or privatization which shifts the degree of the

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[241] Justin Ervin and Zachary A. Smith *Globalization: A Reference Handbook* (ABC CLIO, Santa Barbara, 2008) at [21-26].

[242] New Zealand Ministry of Foreign Affairs & Trade "Treaties and International Law: Text of the Trans-Pacific partnership"(5 November 2015) <http://mfat.govt.nz/Treaties-and-International-Law/01-Treaties-for-which-NZ-is-Depositary/0-Trans-Pacific-Partnership-Text.php>.

[243] Jack Rudloe and Anne Rudloe *Shrimp: The Endless Quest for Pink Gold* (FT Press, New Jersey, 2010).

[244] Rohan Pethiyagoda *Pearls, Spices and Green Gold: An Illustrated History of Biodiversity Exploration in Sri Lanka* (WHT Publication, Colombo, 2007) at [40-56].

[245] Jim Igoe and Dan Brockington "Neoliberal Conservation: A Brief Introduction" (2007) 5 *Conservation & Society* 4, at [432-449].

problem, rather than providing real solutions to solve it.[246] In other words, "the dynamics of dispossession" in which Martin O' Connor refers to "the myth of the liberal society, of the marketplace as a just institution, is that the self-interested pursuit of profits---capital accumulation---can, through the miracle of market exchange, be a win-win game."[247] David Harvey has also referred to "the new imperialism" which is broadly the commodification of nature and culture in all its forms, the corporatization and privatization of public assets, and the revision of common property rights to the private domain with the strong backing of state authority.[248]

In international relations, the root of neoliberal economic globalization became evident in the 1970s with the growth of transnational corporations and their worldwide influence.[249] A more precise marker of the beginning of globalization was the collapse of Soviet communism. At the end of the Cold-War, a promotion of "free market" capitalism in the form of neo-liberalism is a manifestation of "capitalist triumphalism."[250] Since the free market emerged, some benefits have flowed from one nation to other nations. The free market connects the world together by decreasing state's sovereignty. Governments are lacking the ability to pass their own law and policy. There are some explanations that indicate the reasons many countries have declined their sovereign right because of global capitalism.[251] In the beginning, neoliberal strategy promotes the sharing of benefits that create close relationships among leaders of States and international venture capitalists in terms of public-private partnerships. Smith points out that capitalism is as a dynamic stockholder system, characterized by private ownership of property, and prices are set by increasingly deregulated markets and the profit motivation.[252] By doing so, then the global economy extends beyond sovereign national territories, and transnational corporations challenge nation states to guarantee the rights of capital through individualistic forms of contracts and private property.[253] Thus, all stakeholders fairly share in the profits. Corporate profits derive from a company's ability to distribute products globally with speed and efficiency and information technology takes precedence over

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[246] Kean Birch and Vlad Mykhnenko *The Rise and Fall of Neoliberalism: the Collapse of Economic Order?* (Zed Books, London, 2010) at [1-21].

[247] Martin O' Conner "on the Misadventures of Capitalist Nature" in Martin O' Connor (ed) *Is Capitalism Sustainable?: Political Economy and the Politics of Ecology* (the Guilford Press, New York, 1994) at 138.

[248] David Harvey *Spaces of Global Capitalism: Towards a Theory of Uneven Geographical Development* (Verso, London, 2006) at 75; and David Harvey *The New Imperialism* (Oxford University Press, Oxford, 2003) at [157-159].

[249] John Brewer and Frank Trentmann *Consuming Cultures, Global Perspectives: Historical Trajectories, Transnational Exchanges* (Berg, Oxford, 2006); and Frank Trentmann "Introduction" in Frank Trentmann (ed.) in *the Oxford Handbook of the History of Consumption* (Oxford University Press, Oxford, 2012).

[250] Sulak Sivaraksa *Conflict, Culture, Change: Engaged Buddhism in a Globalizing World* (Wisdom Publication, Boston, 2005) at 36.

[251] J.W. Smith *Cooperative Capitalism: a Blueprint for Global Peace and Prosperity* (Institute for economic Democracy: Institute for Cooperative Capitalism, Sun City, 2003).

[252] at [1-9].

[253] Saskia Sassen *The Mobility of Capital and Labor: A Study in International Investment and Labor Flow* (Cambridge University Press, Cambridge,1988) at xxviii.

domestic manufacturing.[254] Several successful companies (oil and mining and companies) have gained their wealth from government contracts. Speaking of transnational corporations, since only a small minority have the capacity to operate on a global scale, their dominance has become similar to what could be considered as a monopoly in terms of capitalism.[255] It has been critiqued that the trade negotiating process lacks transparency.[256]

In globalization, many international corporations have transferred manufacturing facilities and investments to the relatively poor countries. Driven by an ideology encompassing private property rights, international investment law protects foreign investment and monopoly capitalism; those investors earn wealth and profit by taking advantage of the gap in the currency exchange rate, lower wages, and via minimally restricted environmental regulation.[257] With today's advanced technological capabilities, powerful corporations can conduct financial transactions across international borders.[258] This equates to the chief executive officer (CEO) from the far continents deciding and commanding the terms and way of life in a local community. It raises a critical issue regarding corporate social responsibility. Today's global capitalism works closely with the system of a stock exchange as is manifested in financial speculation, international debt, and free trade. [259] Therefore, there is no end to the highest ceiling of growth.

In terms of the influences of neoliberal biodiversity, John Gowdy (1994) argues as follows "when the market system penetrates into new areas (biodiversity conservation), the results can be devastating for local biological resources. A private market economy will overharvest these resources because of market failure."[260] From an ecological point of view, because biodiversity is not quantifiable, market assumptions cannot accurately measure the earth biodiversity.[261] This limitation of the market will cause ignorance of some or selected species that are valuable for the investment. From various legal perspectives, Jan Laitos also points out the unfairness of the market due to monopoly.[262] This market dominance of the supply in a commodity in the market is the primary distorter of a just price. In terms of monopoly capitalism this refers to the practices of a few, large transnational corporations, seeking to dominate the

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[254] Richard A. Hughes *Pro-Justice Ethics: From Lament to Nonviolence* (American University studies: Peter Lang Publishing, NY, 2009) at [167-168].
[255] At 168.
[256] Sasha Maher *Leading from Behind: An Ethnographic study of business diplomacy in the making of free trade agreement in New Zealand* (PhD thesis of the University of Auckland, 2012) at 150.
[257] George Kassinis "the Value of Marketing Stakeholders" in Pratima Bansal and Andrew J. Hoffman (eds) *the Oxford Hnadbook of Business and the Natrual Environment* (Oxford Handbooks Online, 2012).
[258] Peter Muchlinski "Policy Issues" in Peter Muchlinski, Federico Ortino, Christoph Schreuer *(eds) the Oxford Handbook of International Investment Law* (Oxford University Press, Oxford, 2008) at [4-10].
[259] Robert Guttman "Asset Bubbles, Debt Deflation, and Global Imbalances" (2009) 38 *International Journal of Political Economy* 2, at [45-68].
[260] John M. Gowdy *Coevolutionary Economics: The Economy, Society and the Environment* (Kluwer Academic Publishers, 1994) at [83-84].
[261] At 84.
[262] Jan G. Laitos, Sandra B. Zellmer *Natural Resources Law* (2nd, ed, West Academic Publishing, St. Paul, 2015) at [44-45].

world's economics through policies of free trade, governmental deregulation and privatization.[263] In the case of biological resources monopolies, as Vandana Shiva points out decades ago "biodiversity totalitarianism" refers to the negative consequence of biotech-agriculture companies and intellectual property regimes with respect to the rights of seeds in India.[264]

Regarding to the "green economy model,"[265] a current approach of biodiversity neoliberalism can be seen in the economics of ecosystems and biodiversity (TEEB). TEEB is presented as a new type of approach utilizing biotic resources and ecosystem services relevant to the green economy model.[266] Similar to another UNEP suggestion,[267] TEEB recognizes natural resource restraints by distributing the costs of externalities that means the cost of actions currently not transmitted through prices correctly, such as, pollution. Both TEEB and the green economy have stood on the same platform to promote economic values towards biodiversity and ecosystem services.

It is clear that over the forty years, the ecological foundation of sustainability has gone from the strong sustainability to (green) market neoliberalism.[268] The scholar points out that in terms of today's position of strong sustainability, it has been shaped by the neoliberal economic development among developed nations as well as the weak sustainable development of developing countries.[269]

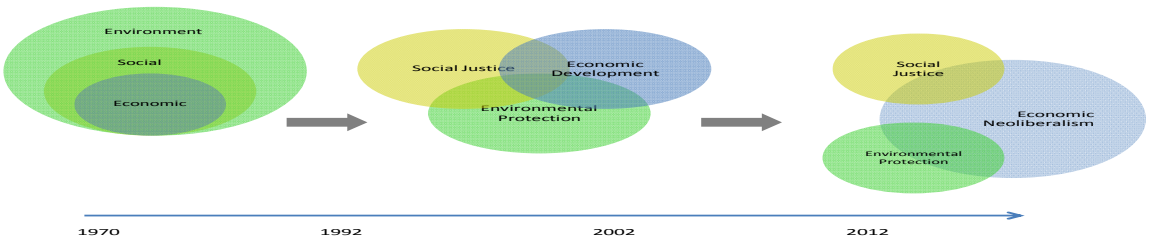

Figure 2. Environmental Movement over the Past Forty Years

Figure 2 shows the transformation of strong sustainable development to the weak mode of market

[263] John G. Simon, Charles W. Powers and Jon P. Gunnemann *The Ethical Investor; Universities and Corporate Responsibility* (Yale University Press, New Haven, 1972) at 103.
[264] Vandana Shiva "Biodiversity Totalitarianism: IPRs as Seed Monopolies" (1997) 32 *Economic and Political Weekly* 41, 2582-2585.
[265] UNCTAD "The Road to Rio+20: For a development-led green economy" (7 April 2013) <www.uncsd2012.org/content/documents/1150172%20Low%20RES.pdf> at vi.
[266] TEEB *the Economics of Ecosystems and Biodiversity for Local and Regional Policy Makers* 2010 (7 April 2013) <www.teebweb.org/media/2010/09/TEEB_D2_Local_Policy-Makers_Report-Eng.pdf>.
[267] UNEP "The Use of Economic Instruments in Environmental Policy: Opportunity and Challenges" (7 April 2013) <www.unep.ch/etb/publication/EconInst/econInstruOppChnaFin.pdf>.
[268] Michael Mascarenhas *Where the Waters Divide: Neoliberalism, White Privilege, and Environmental Racism in Canada* (Lexington Books, Lanham, 2012) at 78.
[269] Tapio Kanninen *Crisis of Global Sustainability* (Routledge, London, 2013) at [70-71].

neoliberalism. The CBD also responds to green economy via privatizing ecosystem services by re-evaluating the economic method to increase the intangible values of those biodiversity and its services. It should be noted that after 2010 the CBD has increased its roles on biodiversity and socio-economic development by encouraging the contracting parties to open access and the sharing of benefits of biotic materials into the world food and drug market. While the economic incentives would be a good solution to poverty elimination, the CBD seems to ignore the consequences of market dominance that reflect on human rights as discussed previously.

Under neoliberal biodiversity, the CBD strategically uses the weak mode of sustainable development to compromise with the strong will of the earth biodiversity protection. Privatizing and marketing biodiversity will transfer public/commons resources to private investors. At this point, it is argued that the CBD regimes lose the strong spirit of sustainability, so sustainable development has been easily manipulated by biodiversity neoliberalism. As discussed above, the result of human population and consumerism have caused the unbalanced momentum among the three aspects of sustainable development including economically, socially, and environmentally. Thus, biodiversity for sustainable development might be a misguided approach that leaves the rest of earth biodiversity in hands of neoliberal market based instruments.

In contrast, the structure of neoliberal biodiversity for SD is different from the framework of strong sustainability. Bosselmann argues that rather than political ideology, sustainability obtains its legitimacy to limit, ban and control overexploitation of the earth commons, because it is a *grundnorm* (fundamental norms of international community) as it can be found in MEAs.[270] Hence, ecological values deriving from protecting the ecological integrity will benefit all people and the future generations as the common heritage of humankinds. So, biodiversity cannot be limited to states and not limited to only a few.

1.7 State Private Property or Common-Pool Management in Debate

In contemporary times, there are two systems suggested in this work for global biodiversity governance, (1) the system of property regimes (2) the sustainable communal-pool system.

1.7.1 Private Property Regime

Since State/Nations treat sovereign rights as private property rights over natural resoures, the old-fashioned and out of date paradigm of Lockean theory of private property rights has become a first choice for biodiversity governance. Due to the fact that biodiversity has some commons characteristics, so misuse of absolute rights may contribute to the ecological crisis. It can be assumed that the legal

[270] Klaus Bosselmann "The Rule of Law Grounded in the Earth: Ecological Integrity as a Groundnorm" in Laura Westra anad Mirian Vilela (eds) *The Earth Charter, Ecological Integrity and Social Movement* (Earthscan, London, 2014) at [3-11].

philosophical root of private property rights over the utility of terrains is somehow in contrast with the concept of sustainability.[271] This means the biodiversity management based private property rights do not properly relate to environmental protection or environmental law. However, because it is only a legal tradition that several societies have carried on since the time of Westphalia[272] during which time *war* was compared to “the state of nature”[273] as well as the wilderness was considered wasteland.[274] While the intrinsic value of ecosystem had not yet been recognized, the instrumental value of biotic resources was clearly visible and more acceptable in regard to the trade system. It therefore would be fair enough to point out that the owner of the property should have private rights in his/her the land.

In the international community, nation state is as a legal personality who has territorial sovereignty to manage its own property, referencing private property.[275] When it comes to the earth biodiversity management, the nation state is also a key actor of the private property regime. Since the mid-1970s, the legal regime theory that has emerged as a great solution, seeks a balance on resource allocation among customary international norms. [276] Stephen D. Krasner (1983) defined that "regimes" are involved with a variety of "implicit or explicit principles, norms, rules and decision-making procedures" around which all state-actors (as a legal personality) are in agreement on a particular area of international relations.[277] Success of regime operation may rely on strong cooperation, implementing treaty, allocating rights/duties of state sovereignty. The scholars argue that the core of international regime is "a cluster of rights and rules [whose] exact content is a matter of intense interests to these actors."[278] Basically, those who construct the regimes have initiatives and rights and rules reflect decisions relating to which kinds of state behaviors should be supported and banned.[279] Regime theorists assume that the effectiveness of such norms influence state behaviors, while on the other hand, the norms are also created by the pursuit of nation states' interests.[280] To ensure implementation, the regime theory stands on the contract agreement among sovereign state actors, although there is no real absolute authority in the international arena. In the absence of legal enforcement the regime scholar presumes that negotiated rules and norms under

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[271] Prue Taylor and David Grinlinton *Property Rights and Sustainability: The Evolution of Property Rights to Meet Ecological Challenge* (Martinus Nijhoff, Leiden, 2011).
[272] Sean Coyle and Karen Morrow *the Philosophical Foundations of Environmental Law: Property, Rights and Nature* (Hart Publishing, Portland, 2004).
[273] Christopher La Barbera *State of Nature: Animality and the Polis* (Peter Lang, NewYork, 2012).
[274] Neal Wood *John Locke & Agrarian Capitalism* (University of California Press, Berkeley, 1984).
[275] Barnes, above 181, at 222.
[276] Van Harro *The Fragmentation of Global Climate Change,* above n 168, at 29.
[277] Stephen D. Krasner "Structural causes and regime consequences: regimes as intervening variable" in Krasner D. Stephen (ed) *International Regimes* (Cornell University Press, NewYork, 1983) at 2.

[278] Robert O. Keohane "Against Hierarchy: An Institutional Approach to International Environmental Protection" in Peter M. Haas, Helge Hveem, Robert O. Keohane and Arild Underdal (eds) *Complex Cooperation: Institutions and Processes in International Resources Management* (Scandinavian University Press, Oslo, 1994) at 22.
[279] Andreas Hasenclever, Peter Mayer and Volker Rittberger *Theories of International regimes* (Cambridge University Press, NewYork, 1997) at [14-15].
[280] Robert O. Keohane and Joseph S. Nye Jr. *Power and Interdependence* (3rd ed., Longman, NewYork, 2001) at [9-17].

regime construction can capture more compliance/performance regarding contract treaty which state party has signed and ratified.

1.7.2 Sustainable Common-Pool Governance

With respect to the commons scholar, Elinor Ostrom suggests that commons resources can be properly managed as the common-pool resources (CPR) introducing a way of compromising Lockean's exclusive right with the safeguarding of the commons.[281] The CPR refers to the mixed systems of private and shared property rights where there are no exclusive rights against others from access and use.[282] Ostrom described how many communities of the CPR can develop shared understandings and social norms and finally fomulate legal rules and institutions that enable them to manage the commons in a sustainable manner. However, although private property rights are not absent, they are carried out to govern the limitation of use of the members.[283]

Regarding global biodiversity governance in relation to the CPR approach, the role of the public functions of state sovereignty will be more emphasised instead of the private functions. Thus far, the high tension of anthropocentric climate change has been put forward that absolute sovereignty may become anachronistic. And state also cannot ensure its obligations to secure the public functions of its own property. At this point, many scholars propose the technical term of "state as trusteeship".[284] Applying the ethical norms of trust present a strong point that state becomes as the trustee for the earth commons, rather than the owner of terrain. This approach has brought a sense of unity instead of separation. Whilst scholars explain that trust agreement does not challenge sovereignty, on the other hand it is an expression of public trust functions.[285] Consequently, Bosselmann (2008) suggested that the theory of "the state as environmental trustee" (state-trusteeship) activates fiduciary obligations to the state owner,

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[281] Elinor Ostrom *Governing the Commons: the Evolution of Institutions for Collective Action* (Cambridge, Cambridge University Press, 1990).
[282] Weston and Bollier, above 160, at [124-125].
[283] Elinor Ostrom, Roy Gardner, and James Walker *Rules, Games, & Common-Pool Resources* (University of Michigan Press, Michigan,1994); Lee Anne Fennell “Ostrom’s Law: Property Rights in the Commons” (2011) 5 *International Journal of the Commons* 1, 9 at 15.
[284] Klaus Bosselmann *The Principle of Sustainability* (Ashgate, Burlington, 2008) at [145-149]; and Klaus Bosselmann *Earth Governance: Trusteeship of the Global Commons* (Edward Elgar, Cheltenham, 2015) at 155, [169-171], [198-199]; and Weston and Bollier, above 160, at [245-248]; and Jan G. Laitos *The Right of Nonuse* (Oxford University Press, Oxford, 2012) at [115-116]; and Mary Christina Wood *Nature's Trust: Environmental Law for a New Ecological Age* (Cambridge University Press, NY, 2014) at [324-326]; and Peter H. Sand "Sovereignty Bounded: Public Trusteeship for Common Pool Resources" (2004) 4 *Global Environmental Politics* 1 at [47-71].
[285] Catherine Redgwell "Reforming the UN Trusteeship Council" in W. Bradnee Chambers and Jessica F. Green (eds) *Reforming International Environmental Governance: From Institutional Limits to Innovative Reforms* (United Nations University Press, Tokyo, 2005) at 179.

binding every state to take responsibility for the global community.[286] The instance can be found in the public trust doctrine in the domestic legal system.[287]

1.7.3 Limitation of Modern Social Contract

Whereas Hobbes' social contract theory is deeply embedded in international law and international relations, it is limited within the framework of anthropocentric senses and state-centric.[288] The State/Nations or intergovernmental organizations are only the subject of agreement according to the Vienna Convention on the Law of Treaties, 1980. At this point, the State/Nations cannot accept other groups to become a part of the international agreement. In regard to eco-centric views, social contract theory was based on human's rationality in a political vision of human existence on Earth as a master of non-human species and nature.[289] So, other groups or non-humans that exist outside the social contract are only objects in terms of the contract.[290] The influence of the social contract encouraged individual States to accord together for the security and wellbeing of their own group against the threats from the state of nature (war).

At the new Anthropocene epoch, the consequences of climate change and biodiversity collapse are far beyond the capacity of social contract and state boundaries to defend. Such environmental global problems need global participation. For decades, the UN has addressed the call for a new social contract for global governance.[291] Once again in the 2012 Rio+20 Conference the State/Nations and heads of governments had struggled to reaffirm their political commitments. In contrast, a growing number of groups were participating globally such as multi-international companies, NGOs, and civil societies who were involved in the UN projects.[292]

1.8 Transformative Aspects of Global Governance for Sustainability[293]

Firstly, it is a transformation of territorial sovereignty to state-trusteeship. The nation state as a trustee is to safeguard the biodiversity commons and shared resources.[294] As discussed, this argument is based on the presumption that biodiversity is a part of the biosphere and its commons characteristics cannot be captured under the rule of private doctrine. Thus, the earth commons cannot be limited by political

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[286] Bosselmann *The Principle of Sustainability* , above 284, at [145-149].
[287] Weston and Bollier, above 160 at [245-248].
[288] A.P. Martinich "A Hobbes Dictionary: Covenant (*pactum*)" (2005) <www.blackwellreference.com>.
[289] Baird J. Callicott *Thinking Like a Planet* (Oxford University Press, Oxford, 2013) at [242-244].
[290] La Barbera *State of Nature: Animality and the Polis* above n 273, at [38-39].
[291] Ronald J. Engel "A Covenant of Covenants: A Federal Vision of Global Governance for the Twenty-first Century" in Colin L. Soskolne in *Sustaining Life on Earth* (Rowman & Littlefield Publishers, Inc., 2008) at [27-39].
[292] Tapio Kaninen *Crisis of Global Sustainability* (Oxon, Routledge, 2013) at 69.
[293] Bosselmann, Engel, and Taylor, above 126 at 3; and Bosselmann, above 284, at [175-177].
[294] Klaus Bosselmann *Earth Governance: Trusteeship of the Global Commons* (Edward Elgar, Cheltenham, 2015, at 155, 169.

boundaries, since it is global.[295] The earth commons: the physical and functions of bio-complexity are significant for the future of humanity, so they must be protected as the common heritage of humankind.

Secondly, state sovereignty is developed by the concern of private property doctrine which includes private and public functions as both sides in a coin.[296] It is the State responsibility to prevent harm to the global environmental populations[297] and the Market enclosure of the biodiversity commons because it serves the needs of all humans and other creatures.[298]

A theory of "governance for sustainability" is the quality based approach focusing on the intrinsic values of bio-environments as a central point.[299] In this theory, ecological integrity is a core principle of the sustainability, reflecting the voice of the Earth citizens[300] that should have participated in the process of governance for sustainability. The theory shifts away from state-centric and public domains to eco-centric by involving a wider range of non-state actors such as global civil society as well as business sectors. In the establishment of global governance for sustainability, it is important to incorporate all multi-partners beyond the powers of state-centered governance to achieve common goals on the basis of a set of ecological normative rules regarding the Earth Charter guidelines.

The Earth Charter initiative consists of several key principles that capture both legal norms and the ecological virtue of ethics beyond the concept of humankind's domination of nature and regarding the international level, the Charter was officially recognized at the World Summit on Sustainable Development in Johannesburg 2002.[301] Moreover, it was adopted by virtue of a diversity of international and national associations. In domestic practice, the government of the Netherlands implemented the Charter with the term "covenant" as agreement between national and other groups such as local environmental regulators, agricultural sectors, corporations, and so forth to create an ecologically sound measurement.[302] It has been suggested that covenant doctrine as environmental agreement can be commonly found in the environmental legal system of the Netherlands.[303] Rene Seerden suggests that the Dutch environmental agreements are commonly termed as "environment covenants *(milieuconvenanten)*."[304] In the Flemish region (Belgium and the Netherlands), the covenant doctrine is

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[295] Bosselmann, above 284, at 166.
[296] Barnes, above 181, at [222-223].
[297] Bosselmann, above 284 at [165-169].
[298] Weston and Bollier, above 160 at [146-147].
[299] At [175-177].
[300] At xiv.
[301] Peter Blaze Corcoran, Mirian Vilela, and Alide Roerink (eds) *The Earth Charter in Action: Toward a Sustainable World* (KIT, Amsterdam, 2005).
[302] Mark D. Gismondi *Ethics*, *Liberalism and Realism in International Relations* (Routledge, NY, 2008) at 34.
[303] Eric W. Orts and Kurt Deketelaere "Introduction: Environmental Contracts and Regulatory Innovation" in Eric W. Orts and Kurt Deketelaere (eds) *Environmental Contracts: Comparative Approaches to Regulatory Innovation in the United States and Europe* (Kluwer Law International, London, 2001) at [1-35].
[304] Rene Seerden "Legal Aspects of Environmental Agreements in the Netherlands, in Particular the Agreement on Packaging and packaging Waste" in Eric W. Orts and Kurt Deketelaere (eds) *Environmental Contracts: Comparative*

recognized as agreement, and serves an essential role in relation to environmental agreements. Michael Faure points out that rather than a contract-based agreement which can easily be withdrawn, environmental covenant guarantees non-negotiation.[305] This means the negotiated rule/law-makers based on tradeoff incentives could hardly terminate the core principles of environmental protection.

From the perspective of the Earth Charter, universal responsibility requires all global citizens to work together including citizens, civil societies, businesses, nations, and governments. This concept of citizenship addresses the idea that all have ecological awareness for Earth and shared responsibility. In terms of the big picture, the global governance for sustainability holds the integrity of Earth's ecosystem as a core essential to be protected in a covenant of trust and care for all life forms and humanity. Its success calls for and asks those state/nations to renew their commitment to the United Nations in a concrete form of covenantal arrangement.

1.9 Contract, Compact, and Covenant: What is Different? Why is Covenant?

It is a priority of this thesis to investigate a new social agreement that can secure commitments for biodiversity protection and even open the way for global participation as a part of this global agreement. Three terms will be discussed; contract, compact, and covenant. These three terms derive from the same root to capture a solemn commitment. Basically, a contract agreement is used in a formal letter of law, ensuring the promises must be kept. Contract constitutes the parties of individuals for satisfaction of mutual interests, and focuses on the rights and obligations of the contract parties. However, to ensure the beneficiaries of those non-parties or the commons, the contract tends to be minimal in its responsibility.[306] For resources dispute or shared resources allocation, contract agreement may guarantee the fairness and benefit sharing among the parties. As it relates to neo-liberalism, nation state enters into the contract agreement to protect their private interests. They are held together by mutual self-interest to protect their own property, rather than by community interest(s) to shared values of the common goods. Therefore, contract cannot hold agreement in trust in particular to protect the common values.

Therefore covenant and compact may be a right alternative. According to D. Elazar, whilst the nature of contract fits with the private and business aspects, covenant and compact are constitutional and public in terms of their characteristics.[307] It is suggested that the characteristic of covenants and compacts are broadly reciprocal.[308] Both aim to unite people with collective/common interests to shared values or norms

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Approaches to Regulatory Innovation in the United States and Europe (Kluwer Law International, London, 2001) at [179-195].

[305] Michael Faure "Environmental Contract: A Flemish Law and Economics Perspective" in Eric W. Orts and Kurt Deketelaere (eds) *Environmental Contracts: Comparative Approaches to Regulatory Innovation in the United States and Europe* (Kluwer Law International, London, 2001) at [167-177].

[306] Loren E. Lomasky "Contract, Covenant, Constitution" (2010) 28 *Social Philosophy and Policy* 1, at [50-71].

[307] Daniel J. Elazar *Covenant & Constitutionalism: the Great Frontier and the Matrix of Federal Democracy* (Transaction Publishers, New Brunswick, 1998), at [7-8].

[308] Mark D. Gismondi *Ethics*, *Liberalism and Realism in International Relations* (Routledge, NY, 2008) at [30-31].

in a commitment to the long-term wellbeing of all community members.[309] For Elazar, every covenant involves consent, promise, and agreement.[310] So, it can be pointed out that covenant captures the legal and moral obligations in both a secular and religious sense. In terms of the commons, rather than to limit the members' responsibility to the narrowest requirement of contract, covenant/compact agreements are obligated to respond to one another beyond the letter of private contract law.[311] So, they can draw more public participation to protect the biodiversity of the earth. Traditionally, the term covenant refers to a solemn commitment to one another required for sustaining the solidarity of all members of a society to strongly protect their core fundamental values[312]. It has been said that the concept of covenant originally existed in the context of religious philosophy and was then later adopted by secular views.[313] Those great philosophers such as Thomas Hobbes and John Locke posited the social contract to join individuals to limit their absolute freedom to follow an authority in exchange for their own security and common wellbeing.[314] A fear from insecurity by the "State of Nature" leads them to constitute the government.[315] The success of social engagement at this point is bound by secular covenants.[316] Thus, this bond of mutual entrustment (assignment of responsibility) between the citizen and the government is a core tenet of the social contract under the terms of Hobbes's contractarianism or compact.

In international relations, both covenant and compact notions can be found in the international debate for a decade.[317] At present, it is clear that the United Nations has chosen a new social arrangement based on compact. The UN Global Compact Governance is a new UN networking framework that has set forth, and allowed multinational corporations to take part and join in UN operations. The message is clear that "the UN Global Compact is a voluntary initiative based on CEO commitments to implement universal sustainability principles and to undertake partnerships in support of UN goals."[318] The CEO commitment is set under the framework of "the Ten Principles of the United Nations Global Compact."[319]

Why does the covenant fit with the thesis context? For the purposes of this thesis, covenant notion is more appropriate than contract and compact, because it holds a sense of the universal responsibility for

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[309] Eric Mount Jr. *Covenant, Community, and the Common Good: An Interpretation of Christian Ethics* (the Pilgrim Press, 1999) at 21.
[310] Elazar *Covenant & Constitutionalism* above n 307, at 7.
[311] At 8.
[312] Bosselmann, Engel, and Taylor, above n 126, at 47.
[313] Elazar, above n 307, at [7-8].
[314] Henrik Olsen and Stuart Toddington *Law in Its Own Right* (Hart, Oxford, 1999), at [121-123]; and Aksel Sundström *Covenants with Broken Swords: Corruption and Law Enforcement in Governance of the Commons* (University of Gothenburg, Gothenburg, 2014), at [1-2].
[315] La Barbera, above 273, at 39.
[316] Stephen L. Darwall *Contractarianism, Contractualism* (Blackwell, Oxford, 2003), at [1-3].
[317] David Held *Global Covenant: the Social Democratic Alternative to the Washington Consensus* (Polity, Oxford, 2004).
[318] *Towards Global Partnerships: A principle-based approach to enhanced cooperation between the United Nations and all relevant partners* UNGA/RES/68/234, UNA/C.2/68/L.24 (2013).
[319] The UN Global Compact Office, *United Nations Global Compact Annual Review 2010* (16 May 2014)<*www.unglobalcompact.org/docs/news_events/8.1/UN_Global_Compact_Annual_Review_2010.pdf*>.

the commons.[320] Although both refer to moral or ethical obligations, compact seems to limit itself to anthropocentric responsibility. In contrast, covenant responsibility includes the earth biodiversity. Hence, in order to create a stronger binding agreement based on the eco-centric theme, covenant must be a perfect choice.

For Bosselmann, a covenant can be seen as an unconditional commitment to be faithful to others as it relates to humankind's fundamental values and behaviors. Historically it has served as the spiritual and moral authority for foundational political agreements such as national constitutions and international treaties.[321] As Laura Westra noted that the notion of covenants is "a powerful heuristic tool for understanding why, of the thousands of charters and agreements, some succeed and others fail. Charters and declarations of moral principles do not of themselves change the world; only the covenants that bear them do."[322]

Here covenant is a term of choice in order to set forth a strong agreement for governing the earth biodiversity commons. According to Ronald J. Engel, "covenants are open, unconditional commitments to be faithful to others regarding our most fundamental values and behaviors...."[323] The meaning of covenant is wide enough to cover up legal-political and moral-ethical senses as well as strong enough to allow legal response, so it is used in religious code, domestic constitution and international law.[324]

From a political perspective, Daniel Judah Elazar states that covenant refers to "a binding and solemn agreement" established by two or more parties which involves mutual responsibilities.[325]

> "covenant is a morally informed agreement or pact based on voluntary consent and mutual oaths or premises, witnessed by the relevant higher authority, between peoples or parties having independent though not necessarily equal status, that provides for joint action or obligation to achieve defined ends (limited or comprehensive) under conditions of mutual respect which protect the individual integrities of all the parties to it."[326]

Elazar further describes that covenant is a mutual bond that is equal to all parties. Elazar describes that covenant agreement gives more weight to the moral obligation than to the legal obligation. After covenant is granted, it becomes a broad and mutual obligation in both a legal and moral sense.[327] Its characteristic can be either elastic or rigid depending on the circumstances. Yet, covenantal obligation goes hand in hand with sanctions. Covenant has a characteristic of communitarian and public context rather than

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[320] Ronald J. Engel "A Covenant of Covenants: A Federal Vision of Global Governance for the Twenty-First Century" in Colin L. Soskolne *Sustaining Life on Earth* (Rowman & Littlefield Publishers, Inc., 2008) at 28.
[321] Bosselmann, Engel, and Taylor, above n 126, at 49.
[322] Laura Westra "Future Policy Paths for Ecological Integrity" in Laura Westra, Klaus Bosselmann and Richard Westra (eds) *Reconciling Human Existence with Ecological Integrity: Science, Ethics, Economics and Law* (Earthscan, London, 2008).
[323] Bosselmann, Engel, and Taylor, above n 126, at [48-49].
[324] At [49-50].
[325] Bernhard W. Anderson *Understanding the Old Testament* (4th ed, Prentice-Hall, Englewood Cliffs, 1986) at 89.
[326] Daniel Judah Elazar *Covenant and Civil Society* (Transaction Publishers, 1998) at 8.
[327] Daniel Judah Elazar *Exploring Federalism* (University of Alabama Press, 1987) at [4-5].

private context because it is almost an obligation that reflects the public/commons concerns. The covenant achievement demands trust and fiduciary obligations among the members of the community.

1.10 Ecological Covenant Approach

Moreover, the eco-covenant approach is different from the social covenant because of the eco-centric paradigm. If the social covenant at one time could join different people in a society together and agree upon a new agreement against 'the state of nature' and even form a government, eco-covenant can also play this significant role in binding all participants together in ways that enhances and strengthens self-governance and promotes ecological sustainable community.

1.10.1 Engaged Ecology to Covenant

Ecology refers to the study of living things and how they interact with one another and with the non-living elements of their natural environment. The prefix ‘eco’ derives from the Greek root *oikos,* meaning house, home, hearth, and the contexts that these terms imply. Several contemporary linguistic studies confirm that *oikos* is not merely the physical structure of dwelling, it is also the relationship produced within a house, which constitutes the identity of a family. *Logos* refers to the study of something.[328] In terms of the position in the earlier debate on biodiversity protection, the strongest approach held on the "iron laws of ecology"[329] as a fundamental principle, it supports strong laws and policies. Deep ecologists believe that the principles would allow them to apply the concept involved with the iron rules of ecology to solve the particular problems of biodiversity depletion. In contrast, the exemptionalism believes that because humankind is transcendent, and wise, so with their modern technology humans can escape from the law of ecology, according to Darwin theory.[330] However, E.O. Wilson affirmed that "in its neglect of the rest of life, exemptionalism fails definitively."[331]

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[328] David Suzuki *The Sacred Balance: Rediscovering Our Place in Nature*, Updated & Expanded (3rd ed, Greystone Books, Vancouver, 2007).

[329] As the rules of ecology established by Commoner, 1971, stated (1) “Everything is connected to everything else,” (2) “Everything must go somewhere.” (3) “Nature knows best,” and (4) there is no such things as a free lunch.” In 1980, the iron rules were slightly modified by Ehrlich, 1980 asserted that (1) in nature protection, there can only be successful defenses or retreats. An offensive or advance is impossible because destroyed species and ecosystems cannot be restored.” (One might argue Ehrlich’s rule with biotechnology in species levels, but not in ecosystem level.) (2) Population growth and nature protection contradict each other, and they are incompatible. (3) The economic system’s growth mania and nature protection are incompatible in principle. (3) Making decisions on the utilization of the Earth in order to reach only short-term, immediate benefit of Homo sapiens is deadly dangerous not only to all living nonhuman organism, but in the long run also to mankind. (5) Nature protection is a matter of the well-being and survival of mankind; and A.V. Yablokov and S.A. Ostroumov *Conservation of Living Nature and Resources: Problems, Trends, and Prospects* (Springer-Verlag, 1991) at 220.

[330] E.O. Wilson "Is humanity suicidal", above n 31, at 237.

[331] At 242.

With respect to ecological perspectives, Ronald Engel points out that the term “Covenant of Life” refers to those relationships between human existence and ecological integrity within the earth community.[332] In his view, covenant idea has coexisted in consistence with human civilization throughout our history. People create promises that bind their relationship together. For him, everyone has made covenants with one another with their family, neighbors, friends, co-workers, and even country within or across national boundary. With this covenant, it leads many people to sacrifice their life to war, to protect the motherland or even protect the symbols.

For Engel, covenant agreement is grounded on mutual restraint by not causing harm(s) to the Promised Land in the Western culture. This ecological responsibility relates to traditional belief systems and religious naturalism.[333] From this perspective, the sacredness of the term “covenant” combined with ecological notion in reference to “the ecological covenant” is described by eco-theologians to explain the solemn commitment expressed with the highest spiritual beliefs.[334] Ronald Engel denotes the term “Covenant of Life” referring to those relationships between human existence and ecological integrity within the Earth community.[335] In his view, the idea of covenant has coexisted consistently in human civilization throughout our history. People create promises that bind their relationship together. Everyone has formed and shaped covenants with others. With this covenant, it leads many people to sacrifice their life to go to war, to protect their motherland or even protect the symbols. Even as these covenants may help to save the land or free us from slavery, they will not save us from the “powers beyond us,” or “by the grace that arrives unasked, unbidden.”[336] No covenants or superhuman efforts will be able to save us from Earth without life or the unhealthy Earth with toxic contamination in air and water, and desert lands. No one wants to live on an empty Earth. Engel states that “the covenant that sustains us”[337] is the “covenant of life.”[338]

The eco-covenant approach reflects Bosselmann's ecological justice theory. From the point of view of legal theory, Earth's sovereignty does not obey human law. Legal institutions cannot stop hurricanes, tsunamis, and so forth. 'Force of Nature' is absolute. Fighting against the force of nature could contribute to incidents of ecological collapse, and in turn its impact could lead to social breakdown. It is wise at the moment of the Earth Age to reconnect the law of natural systems to the law of humans. Because the concept of justice is fundamental with respect to legal systems, it should not be treated in limited terms

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[332] Ronald J. Engel “What Covenant Sustains Us?” in Laura Westra, Klaus Bosselmann and Richard Westra (eds) *Reconciling Human Existence with Ecological Integrity* (Earthscan, London, 2008) at [280-291].
[333] Bernard W.Anderson "Creation and Ecology" in Bernard Anderson (ed) *Creation in the Old Testament* (Fortress, 1984) at 167; and Ronald J. Engel, "Property: Faustian Pact or New Covenant with Earth?" in David Grinlinton and Prue Taylor (eds) *Property Rights and Sustainability*: *The Evolution of Property Rights to Meet Ecological Challenges* (Martnus Nijhoff, Leiden, 2011) at [66-67].
[334] At 66.
[335] Ronald J. Engel “What Covenant Sustains Us?” ,above 204, at [280-291].
[336] At 290.
[337] At 291.
[338] At 291.

from the sole perspective of humankind alone. The theory of ecological justice associated with ecological ethics suggests a certain ecological responsibility of humans to look after and care for non-humans. Additionally, the principle of care/respect for other life forms leads to the 'equity' of sharing the "basic needs" for other life forms such as habitats and primary foods. John Rawls's theory of justice suggested the concept of "distributive justice" that refers to a fair share of resources to all humans. However, Rawls did not further suggest beyond the anthropocentric. In so-called legal doctrine, Christopher D. Stone expanded the degree of justice to the non-human world. Five areas of Stone's equities are related to a fair and just distribution of the global commons. These include (i) "inter-national equity" (regarding the sorts of benefits and functions of biotic resources among nations);[339] (ii) "intra-national equity" (regarding the sorts of benefits and functions within nations, particularly to indigenous peoples and local communities);[340] (iii) "inter-generational equity" (relating to duties of future generations);[341] (iv) "inter-species equity" (regarding the sorts of conservation efforts among competing species and ecosystems);[342] (v) "planetary equity" (regarding how much of the Earth's system and biotic resources homo sapiens claim to exploit in competition with other species.)[343] The focus of these, Stone's equities areas, points to fair-use of the Earth's biodiversity commons that addresses all kinds of stakeholders depending on the Earth's integrity. Similar to Stone's equities for inter-species and Earth, Bosselmann's ecological justice further enlightens the scope of justice to overlay the non-human sphere as a part of justice *(justitia communis).*[344] From Bosselmann's perspective, 'ecological justice' captures the poor, future generations as well as non-human species. Ecological justice is different from environmental justice. While the former stands on an eco-centric basis, the latter is anthropocentric. Instead of the expansion of traditional anthropocentric justice under the context of legal rights or justice to capture human moral sense, via paradigm shift, ecological justice integrates a transformative approach. Bosselmann footnotes that "when Jesus Christ or the Buddha preached a compassionate approach with even the lowest caste, they were not urging the moral high priests to apply their principles more widely, rather to reject an ethic in which people are honored and respected on the basic of status, wealth, skin, color and the like."[345] The most important is the eco-centric paradigm. In terms of the legal rights that humans create in relation to the environment or some specific species or a way to humanely treat species or expand such rights/justice to others would be biased to another group at the same time, so they would not achieve ecological justice.[346] Clearly human beings and biodiversity do live within a particular environment, yet Earth does not belong to a single

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[339] Christopher D. Stone *Should Trees Have Standing?* (Ocean Publication, New York, 1996) at [123-129].
[340] At 123.
[341] At 123.
[342] At 123.
[343] At 123.
[344] Klaus Bosselmann "Justice and the Environment: Building Blocks for a Theory on Ecological Justice" in Klaus Bosselman and B.J. Richardson (eds) *Environmental Justice and Market Mechanism* (Kluwer Law International, London, 1999) at [30-57].
[345] At 50.
[346] Bosselmann, above n 284, at 131.

species, and the zoological and botanical parks are not a home for other species. In this sense they are not a resource or commodity for the benefit of humankind.

The eco-covenant approach expresses the concept of Earth Jurisprudence and the Great Law. The characteristics of eco-centric covenantalism in terms of promoting the protection of Earth and its aspects can be recognized under the concept of Earth Jurisprudence. In the Great Work published in 1999, wherein Thomas Berry called for a new jurisprudence to redefine the human-natural relationship. According to Berry, the legal traditions of environmental jurisprudence represent anthropocentric, emphasizing the individual rights of humans towards the community of life forms as their existence for serving human interests.[347] This jurisprudence supports industrials, commercials, and trades in relation to natural resources without limitation. He criticized that the present legal system "is supporting exploitation rather than protecting the natural world from destruction by a relentless industrial economy."[348] In association with the human paradigm, the natural community has obtained no rights for its own sake. It can be seen in the work of Burdon Peter pointing out that the theory of Earth jurisprudence places the concept of Earth's community at the highest priority beyond the anthropocentric legal jurisprudence.[349] Berry advocates that the legal status of Nature needs to be recognized. The interdependence between the human community and the community of life is defined by Earth jurisprudence as the mutually dependent relationship, rather than resources or property. At this point, Nature itself can enhance human wellbeing if such a reciprocal relationship is fully preserved and treated in a manner relating to sustainability.

1.11 Conclusion

Eco-covenant governance applies eco-covenantal principles as the ‘glue’ that holds multi-participants together to protect the commons within and outside of national jurisdiction for the welfare of all life forms and humanity. With a solemn commitment to safeguard biodiversity and preserve ecological integrity for the future generations, eco-covenant reflects a strong sense of accountability. And also, covenant agreement can be written in the form of a constitution.

Eco-covenant governance refers to a network system for the protection of the rest of the earth’s biodiversity commons, relating to biological cultures and private/public sectors that hold the biodiversity in trust for future generations. Whilst the network governance is not limited to state/governments, it expands to stakeholders, working together as an independent actors or organizations within the eco-covenant principles.

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[347] Peter D. Burdon *Earth Jurisprudence,* above 137*,* at [132-133].
[348] At 132.
[349] Thomas Berry "Ten Principles for Jurisprudence Revision" in Mary Evelyn Tucker (ed) *Evening Thoughts: Reflecting on Earth as Sacred Community* (A Sierra Club Book, San Francisco, 2006) at 144.

The eight eco-covenant principles consist of (1) Sacred Trust, (2) Ecological Sustainability, (3) Protection of Ecological Integrity, (4) Interdependence of Biotic Communities, (5) The Middle-Way Doctrine (Being in Balance), (6) Sufficiency (Philosophy of Enough, (7) Planetary Altruism, and (8) Ecological Responsibility.

CHAPTER 2: DIVIDED EARTH WITH TERRITORIAL SOVEREIGNTY

2.1 Introduction

The main argument is territorial sovereignty and overexploitation of biodiversity. Under the new era of the Anthropocene,[350] nation states should not stand on the "default position"[351] to claim absolute sovereignty over protection of the earth biodiversity commons. This Chapter investigates the conceptual problems of human/social boundaries related to the influence of private property that have an impact on the biodiversity of the earth and its complexity. It traces to the Roman legal legacy of *res*, or things to classify an explicit distinction regarding the character of property, including common property. The Chapter examines both the instrumental and intrinsic values of biodiversity and includes an explanation of the character of the commons as well as private and public goods. However, the function of the commons such as ecosystem services has sustained humanity and all life forms without separation. Whilst territorial sovereignty based private property has just been created to resolve resources disputes among states, it does not provide any specific obligations to prevent over-exploitation or even cease state to ruin its territorial biodiversity that can cause alter to the earth's ecosystem as a whole. [352] Because global environmental pollutions and risks have considered as the common interests reflecting human and ecological health, the typical state responsibility of environmental harms is inadequate to prevent States to abuse its own territorial ecosystems. Finally, territorial sovereignty cannot prevent overexploitation and the international legal mechanism of state responsibility is ineffective to cease state to alter the biodiversity commons.

2.2 Boundaries and Biodiversity in the Anthropocene

This section includes an investigation of the concept of boundary that separates human communities from others. One may argue that because human beings are a social species, members of *Homo sapiens*, it is common for us to build communal or private boundaries by natural instinct.[353] Based on this social Darwinism's presumption, the question of boundaries has remained unquestionable. However, beyond their genetic makeup, humans are rational. From an eco-centric perspective, it is a critical moment to pose a question to query if there are larger boundaries which we inhabit beyond the political boundaries we create in relation to the planetary boundaries and the new era of Anthropocene? This question follows from the Nobel Prize hypothesis (by Paul Jozef Crutzen and Eugene Stoermer) that the earth has entered

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[350] Kotzé and Marauhn (eds) *Transboundary Governance of Biodiversity*, above 173, at 15.
[351] Bradly J. Condon *Environmental Sovereignty and the WTO Trade Sanctions and International Law* (Transnational Publishers, Ardsley, 2006) at 232.
[352] Jóhannsdóttir, above n 175, at [203-207].
[353] Thomas F.X. Noble, Barry Strauss, Duane J. Osheim, and others (eds) *Western Civilization Beyond Boundaries* (7th ed, Wadsworth, Boston, 2014) at [672-673].

the new epoch wherein the sum of everyone's human activities could result in negative impacts to the earth's ecosystems.[354]

Although the Earth theory points to human/nature interdependence, the view of ecological connectivity seems to be ignored by politics. Human societies are still attached to the habits of the traditional paradigm of boundaries. The concept of boundaries can be seen from the perspective of two basic aspects; social and territorial boundaries.[355] Firstly, social boundaries draw a line to identify groups of people, so it helps them to recognize their own relatives, their belief systems or ethnic groups to identify them from others.[356] However, social boundaries in return can create a negative result such as racism, classism, imperialism and so forth. Secondly, territorial boundary, which is the main consideration of the thesis, is an artificial line, created to demarcate a portion of the Earth's boundaries to human's topographies.[357] In regard to this point, justification of territorial demarcation has been reaffirmed in several works of those private property and social contract theorists. For instance, Rawls's theory of justice suggests that the fair and just allocation of natural resources could help to avoid conflicts among humans.[358] In terms of property, boundary defines who the certain owner is whether it is an individual or a group who can exclude others from using the particular property. Furthermore, it points to exclusive authority as well as responsibilities over the property.

Similar to the domestic legal system, one of the sources of international law relies on the law of civilized nations, so we would assume that property doctrine could also be involved. So, the concept of territorial boundaries makes sense to international law because it marks out state property and national jurisdiction. According to Oppenheim, territorial boundaries are defined as the imaginary lines on the earth's surface which divide the territory of one State from another, or from un-appropriated territory, and from the Open Sea.[359] The lines entitle sovereign rights to independent nation states to exploit the earth's resources within their jurisdictions.[360] For the international community, it is much easier to deal with a territorial dispute and natural resources usurpation when the line is clear. Under this property doctrine, Earth and its components are separated.

Therefore, those natural elements become an object, thing, commodity to serve the use of the owner. Under the territorial boundaries, Earth's surface is divided in different parts. In contrast, there are some

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[354] Galaz, Biermann, Crona, and others "'Planetary Boundaries"' above n 130, at 83; and Victor Galaz *Global Environmental Governance: Technology and Politics the Anthropocene Gap* (Edward Elgar Publishing, 2014) at [1-10].
[355] Miller and Sohail *Boundaries and Justice: Diverse Ethical Perspectives,* above 171, at [3-6].
[356] At [3-4].
[357] At [4-5].
[358] John Rawls *A Theory of Justice* (Brill, Boston, 2013) at [117-118]; and Hans Christian Garmann Johnsen *the New Natural Resources: Knowledge Development, Society and Ecnomics* (Ashgate, Burlington, 2014) at 200.
[359] Robert McCorquodale "International Law, Boundaries, and Imagination" in David Miller and Sohail H. Hashmi (eds) *Boundaries and Justice: Diverse Ethical Perspectives* (Princeton University Press, New Jersey, 2001) at [136-163]; and L. Oppenheim (Lassa) (ed) *International Law: a Treatise* (Longman, London, 1905).
[360] McCorquodale "International Law, Boundaries, and Imagination", above n 359, at 137, 152.

natural elements that cannot be owned or captured, as they already exist and cannot be separated. Moreover, social and territorial boundaries depend on the earth's boundaries to exist, so, we are a part of the earth community.[361]

2.3 Statehood and Permanent Sovereignty over Natural Resources (PSNRs)

Historically, sovereign authority and territoriality can be traced to the 1648 Treaty of Westphalia in which European nations agreed to respect the principle of territorial sovereignty.[362] Westphalia has been pointed out as the instance of 'paradigm shift,' transforming those early European nations from the hegemonic rulers of the old Christendom/Roman Empire to the modern statehood.[363] Sovereign authority therefore guaranteed that all European nations were equal and in balance. The Peace of Westphalia treaty attempted to end supranational authorities among European states.[364] In this context, sovereignty promises countries, on notion of absolute certainty regarding the "sovereign equality of states," the independence to exercise their right within the state's national jurisdiction and a duty of non-intervention by other nation-states.[365] The treaty brought peace for all new countries. The treaty ensured freedom of nation states to exercise its sovereign authority within a territoriality.[366] So, territoriality becomes a significant part of sovereignty.[367] At the beginning, sovereignty was acceptable as the absolute authority.[368] By that time, Westphalia sovereignty established rights and responsibilities to those new leaders for their citizens, constituted by promises and commitments known as 'social contract.' According to Thomas Hobbes's social contract, 'peaceful society' would accept the responsibility, concerning society and citizens within and without its territory. Hobbes's social contract has reminded us that a State has duties to protect citizens from "the state of nature" (threats).[369]

Since the Westphalian Era, there was the effort to redefine the conception of state sovereignty. The 1933 Montevideo Convention re-characterized the rights and duties of state sovereignty. As seen in Article 1, "the state as a person of international law should possess the following qualifications: (1) a permanent population; (2) a defined territory; (3) government; (4) capacity to enter into relations with other states."[370] To become a part of the international community, a nation-state has to meet these basic requirements. As the unity and coherence of the community is governed by international law, some actions based on self-

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[361] Rockström and Wijkman, above n 30, at [46-47].
[362] Tuomas Kuokkanen *International Law and the Environment: Variations on a Theme* (Kluwer Law International, London, 2002) at [4-5].
[363] Andreas Rechkemmer *Postmodern Global Governance: the United Nations Convention to Combat Desertification* (Nomos, Baden-Baden, 2004) at [12-13].
[364] At 13.
[365] At 13.
[366] Stephen C. McCaffrey *The Law of International Watercourses: Non-navigational Uses* (Oxford University Press, Oxford, 2001) at 61.
[367] Daniel Philpott "Ideas and the Evolution of Sovereignty" in Sohail H. Hashmi (ed) *State Sovereignty*: *change and persistence in international relations* (the Pennsylvania State University Press, University Park, 1997) at [18-19].
[368] Jean L. Cohen *Globalization and Sovereignty: Rethinking legality, legitimacy and Constitutionalism* (Cambridge University Press, NewYork, 2012) at [8-9].
[369] Bilderbeek, Wijgerde, and Van Schaik, above 177, at 80.
[370] See, *Montevideo Convention on the Rights and Duties of States* (1933) TS No 881, 165 LNTS 19.

determination that could be against a peacefulness of community, may be limited. If nation states accept this rule, the law ensures all states will be equal and enjoy the same rights and duties as persons under international law. The concept of self-determination is stated in Convention Article 8 as follows: “no state has the right to intervene in the internal or external affairs of another.” [371] Therefore, the state has the freedom to manage its own natural resources within its territory.

In any event,, the term “a defined territory” became uncertain due to the fact that it did not signify addressing the size of geological lands, rather it included sovereign rights over other lands (as integrity). An interpretation of said term with the tradition of apex sovereignty allows state/s to expand its sovereign power to include '*everything'* within its territorial integrity. Due to the fact that it was difficult to clarify which states had sovereign rights, conflicts occurred. In the *Island of Palmas* (1928) case, a territorial dispute was set between both the Netherlands and the United States in claiming sovereignty over the Island.[372] The primary importance of sovereignty relates to the word “independence”, which describes sovereignty as a state’s independence with regard to a portion of the globe.[373] An independent state has the right to exercise the sovereign power without intervention of any other states.[374] “A state may not claim more than such independence and liberty as is compatible with necessary organization of humanity, with the independence of other states, and with the ties that bind states together.”[375] The Permanent Court of Arbitration in The Hague defined the concept of “territorial sovereignty” and its functions thus:

> “Territorial sovereignty…involves the exclusive right to display the activities of a State. This right has as a corollary a duty: the obligation to protect within the territory the rights of other States, in particular their right to integrity and inviolability in peace and war, together with the rights which each State may claim for its nationals in foreign territory. Without manifesting its territorial sovereignty in a manner corresponding to circumstances, the State cannot fulfill this duty. Territorial sovereignty cannot limit itself to its negative side, to exercise the activities of other States; for it serves to divide between the nations the space upon which human activities are employed, in order to assure them at all points the minimum of protection of which international law is the guardian.”[376]

Peter Malanczuk notes that regarding the concept of territory it is defined by geographical areas located in independent nation/states. So, they are divided by a political borderline from other lands and at the same time they have a unity under the international law. This modern interpretation of territoriality related to absolute property rights covers the air space above the land and the Earth beneath a state's jurisdiction at a depth to the core of the earth. Moreover, it includes 12 miles depth from the territorial water,[377] plus, a 200 exclusive economic zone for exploitation by the Law of Sea Convention (UNCLOS, 1982). The rights

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[371] Alexander Gillespie “Implementation and Compliance Concerns in International Law: The State of the Art within Three International Regimes” (2003) 7 *NZ J. Envtl. L*, 53.
[372] Peter Malanczuk and Michael Barton Akehurst *Akehurst’s Modern Introductions to International law* (7th ed, Routledge, NY, 1997) at [75-90].
[373] Taylor *An Ecological Approach to International Law* , above 192, at [64-65].
[374] At 64.
[375] At 65.
[376] Ian Brownlie *Principles of Public International Law* (7th ed, Oxford University Press, Oxford, 2008) at [178-80].
[377] At 178.

of nation states to determine their own political will and exercise absolute sovereignty within its jurisdictions are still widely recognized in the international community.[378]

2.4 Natural Resources Allocation

The connection of the territorial boundaries and the statehood doctrine provides the state authority over the tangible and intangible elements of Earth. All physical and functional biodiversity whether located above or beneath the terrain are deemed to be in control of the owner of the territory. After the end of WWII and the Cold War, the blooming of economic liberalism and state independence was merged into the protection of property rights and permanent sovereignty over natural resources (PSNRs) that have been well recognized in international law. PSNRs were adopted by the UN General Assembly (UNGA) to continuously promote social/economic development based on natural capital from 1945 to 1974.[379] The wellbeing of people and utilitarian principles gave rise to PSNRs within recognition of international law. Consistent with economic and social development throughout the United States, Japan and European nations experienced significant economic growth between 1950 and 1960.[380] The extended boom of productivity and manufacturing industries depended on energy resources mostly from Middle East countries, particularly oil and gases.[381] To encourage the economic development of developing countries, the elaboration of the principle of PSNRs, the series of UNGA Resolution firstly appeared in 1952[382]. By enhancing economic and commercial agreements, developing countries should be entitled to use and exploit their natural resources in an intensive way. This means that it is necessary for nation states to have the "right to use freely and exploit their natural wealth and resources wherever deemed desirable by them for their own progress and economic development."[383] The Resolution remarks that PSNR right is "inherent in their sovereignty" and it is consistent "with the purposes and principles of the Charter of the United Nations."[384] The Resolution implied the prohibition of other nation states to act in a way designed to impair the exercise of this right. Hence, it was clear that modern social-economic growth represented a strong argument while it linked to poverty elimination via utilization of the state resources.

Ian Brownlie suggested that international law has tended to imitate the individualistic characteristics of municipal law.[385] So, legitimacy of applied property rights to sovereignty over Earth's resources (timber,

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[378] Subrata Roy Chowdhury “Permanent Sovereignty over Natural Resources” in Kamal Hossain and Subrata Roy Chowdhury (eds) *Permanent Sovereignty over Natural Resources in International Law: Principle and Practice* (Frances Pinter, NewYork, 1984) at [1-5].
[379] Nico Schrijver *Sovereignty over Natural Resources: Balancing Rights and Duties* (Cambridge University Press, Cambridge, 1997, 2008).
[380] Andrew Glyn *Capitalism Unleashed: Finance, Globalization, and Welfare* (Oxford University Press, Oxford 2006) at [1-9].
[381] At [8-9].
[382] *Integrated Economic Development and Commercial Agreements* [1952] UNGARsn 5; A/RES/523 (VI) (12 January 1952).
[383] *Right to Exploit Freely Natural Wealth and Resources* [1952] UNGARsn 171; A/RES/626 (VII) (21 December 1952) at Article 1 (2).
[384] Schrijver *Sovereignty over Natural Resources*, above n 379, at [49-53].
[385] Ian Brownlie *Principle of Public International Law* (4th ed, Oxford University Press, Oxford, 1990) at 258.

oil and gas) became an international legal acceptation. In regard to the Earth and its components, they were turned to resources for development and it was necessary to use them wisely for domestic needs and international trade. The right to develop related to human rights gave rise to the *International Covenant on Economic, Social and Cultural Rights* and the *International Covenant on Civil and Political Rights 1966*, two classic evidence examples of development-based resource exploitation. Under such an international economic order, international law seems to justify and even support the actions taken by nation states for gaining effective control over any means of production and natural resources within their territory to achieve social economic development. Developing countries mainly supported the principle of PSNRs by intertwining it with human rights, economic and developmental rights and protection of the environment, sovereignty and the independence of states. In particular, the links between human rights and "the right of people to dispose and benefit from their natural resources"[386] were strong in international debates, which brought the declaration of the principles of PSNRs to the Human Rights Commission of the United Nations.

An example of how humanity sought to pursue enclosing the global commons can be seen in the 1982 UN on the Law of the Sea. Driven by economic development, democratic states are subject to the demands of their own citizens. In terms of the exploitation of natural resources, when the demand of use was requested, certain powerful nation states have returned to the global commons, a defenseless target that is available free for all to use to be captured. However, the control over the captured resources could be in the hands of a few states. As a result it led to the concept of fairness. The Law of the Sea set the regulation aiming to diminish the power of a state to control or exploit the *Area*, particular the deep seabed because all rights are preserved for all humans as the common heritage of (hu) mankind.[387] However, the principle does not mean to protect the natural environment of the Area *per se*[388], rather than preserving the resources in a sense of fair use. The exception can be seen under the benefit of mankind.[389] Later, the conflicts between developed and developing countries to gain access to exploit the Area were negotiated under the transfer of technology.[390] At this point the activities such as the deep seabed mining can be carried out in the Area, but the condition of marine environment protection resulting from such activities must be taken into account.[391] As a result of the negotiated rule-making process, the commentator points out that the sound of transfer technology and sharing financial benefits allows for the idea of economic legal regimes such as fair and reasonable commerce and free market to erode the common heritage concept.[392] At this point, because of the demand for economic growth, it would not be

[386] *Concerted Action for Economic Development of Less Developed Countries*, UNGA Res. 1515 (XV) of 15 December 1960.
[387] The UN Convention on the Law of the Sea 1833, 1834, 1835 UNTS 31363 (entered into force 16/12/1994) at Part XI, Article 136.
[388] At Article 137.
[389] At Article 140.
[390] At Article 144.
[391] At Article 145.
[392] McCorquodale, above n 359, at 147.

easy to stand for global environmental protection to keep a strong political accountability without the state responsibility.

With respect to the 1972 Stockholm Declaration, it is important to realize that legal rights based anthropocentrism focused human attention on the global environment. Whereas humans have the fundamental right to freedom, equality and adequate conditions of life to live in a good quality environment, this is true for all of us, as together we bear a solemn responsibility to protect and improve the environmental for today's and tomorrow's generations.[393] Unfortunately, although humanity enjoys these rights, we often ignore our responsibilities. Because of this anthropocentric attitude we drive state governments to increase sovereign territory to high seas over the Earth's commons, so treaties dealing with natural resources have allowed States to enclose such commons.

On the other hand, the side-effect of sovereign rights has caused nation states to monopolistically claim absolute rights over the Earth's ecosystem. The effort of limitation was brought to international debate. Many international wildlife and habitat protection laws were enacted between the 1950s and 1980s, such as The International Convention for Regulation of Whaling, 1946 (ICRW), CITES, 1973, Conservation of Antarctic Marine Living Resources, 1979, The United Nations Convention of the Law of the Sea, 1982 (UNCLOS) and regional agreements like the Convention on Nature Protection and Wildlife Preservation in the Western Hemisphere, 1940, the Africa Convention on the Conservation of Nature and Natural Resources (1968), ASEAN 1985, among others. A variety of general principles and guidelines emerged and were potentially applicable, such as UNEP in Shared Natural Resources, the IUCN in the World Conservation Strategy and the UN in the World Charter for Nature, and so forth.

However, in respect of common interests related to ecological crisis, the problems are not only involved with the numbers or absence of enforcement, they are also involved with the conceptual problem of international environmental law and that is the statehood doctrine with its PSNRs. The reason for this is simple as for the most part the international environmental legal mechanism emphasizes global environmental welfare based on state's interests that are limited to nation states exercising their sovereign rights. Whilst state, that is state governments enjoy sovereignty they do not want any constraints placed on their sovereign rights. At this point, if one looks at the general principles of international environmental law, reflected in several treaties related to biodiversity, ones would realize that most of those principles in fact attempt to limit the absolute power of state sovereignty and activities (common heritage, common concern, community interests, neighborliness, and so forth) that cause negative impacts to the global environment.[394] However, only state sovereignty acts as a barrier to limiting the competence of these environmental principles. In one way or another, misconduct of the states in exercising its supreme authority to the earth's exploitation within its jurisdiction impacts the right of other

[393] The 1972 Stockholm Declaration, at Principle 1.
[394] David Hunter, James Salzman and Durwood Zaelke *International Environment Law and Policy* (4th ed, Foundation Press, NY, 2011) at [441-442].

neighbors to enjoy their environmental welfare. For example, the massive forest-fires currently occurring within Indonesia's state territory and damaging its wildlife inhabitants are protected by the right not to be interfered with if there is no official inquiry on the part of the Indonesian government to the international community (ASEAN Charter Article 2 (e)). The huge dam constructed in the heart of the Amazon rainforest can potentially harm and alter the ecosystems of the entire basin; these effects are also protected by state sovereignty. All of the sources of such harmful activities are no doubt also occurring somewhere within other states, further impacting the world as a whole.

As a part of the international community, although the status of state sovereignty is still important, its roles in terms of applied sovereign power are irrelevant and represent an obstacle for achieving global biodiversity protection.[395] According to global environmental problems, the result leads several commentators to question and re-define state sovereignty.[396] In the early drafting process of the Biodiversity Convention, IUCN expert John Vallentyne stated that “national sovereignty is an outdated, ill-founded, counter-productive belief when used beyond reasonable limits for systems that pass freely across political boundaries.”[397] He suggested that sovereign rights over natural resources must comply with the right of sustainable use of natural resources[398] (sustainable exploitation). Another well-known IUCN member, Jeffrey McNeely, also stated that,

> “Governments use the concept of national sovereignty to further their own particular interests. Numerous examples could be shown where national sovereignty has been impinged in the name of exploiting natural resources; but when efforts are made to conserve those resources national sovereignty is called upon to prevent those actions.”[399]

Both critics give a clear description of the way in which the misuse of state sovereignty of biotic resources has occurred, wherein States take property rights as a means for protecting its own property, yet care less about the planetary ecosystem as a whole that links biotic elements. Anthony Carty (cited in P. Taylor, 1998) observed that "the relationship of a state to its own territory could be described in the same language as that of a private individual towards his own property…."[400] Therefore, it can be seen that while territorial sovereignty and state property rights are merged and recognized by international law, they create significant power for the individual state to freely exploit the world’s natural resources. Additionally, whilst biodiversity is considered as resources or raw material for supporting economic development, some governments will often take advantage of absolute sovereignty as a "permanent political freedom"[401] to support economic growth. States also claim sovereignty over natural resources within the broad scope of the term political territory, rendering territorial sovereignty into a 360 degree vertical and horizontal scale.

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[395] Bilderbeek, Wijgerde, and Van Schaik above n 177, at 30.
[396] Schrijver "The Dynamics of Sovereignty in a Changing World" above n 172, at [80-89].
[397] Bilderbeek, Wijgerde, and Van Schaik, above n 177, at [78-80].
[398] At 79.
[399] At 79.
[400] Taylor , above n 192, at 119.
[401] At 119.

Although there are efforts to redefine state sovereignty, this attempt may be voiceless as long as the interpretation of sovereignty is associated with the concept of property ownership.

2.5 Sovereignty and Territoriality based Property Doctrine

In order to offer a direct challenge to sovereignty, it is necessary to look at the role of property doctrine and the way it coordinates and interplays with territorial sovereignty. It is clear that both common and civil law jurisprudence recognize property law. It can be assumed that private property rights exist in all societies.[402] Basically, the property interests in natural resources (including biodiversity and its elements) is defined mainly according to three types, private, public, and common goods. In common law, the characteristics of private goods are reliant on permanent ownership, utilitarian, transferability, and stability in terms of the legal context.[403] Traditional legal concept describes that property rights and duties can be defined in terms of a sense of completeness, which means an owner of property can rule out others from using that specified property.[404] And the property can be simply transferred from one to another and it should be stable. Another type of resources is "public goods" which cannot be counted the same as the private characteristics. Some parts of biodiversity may have their own intrinsic values beyond economic analysis. Some of the aspects of biodiversity can be counted as "common goods." Currently, there are the attempts to privatize the flow of ecosystem services (for example, natural pollinators) in light of payment. In this way, investors who pay for enjoining their ecosystem services, the ones that include private property rights, create a command and control over such fundamental sources of ecosystem services (wetlands, and forests). For foreign investors, it is assumed that such rights will be protected by the international investment law over the forests or wetlands. Even so, whoever applies property doctrine to their approach must recognize that there are positive and negative interests.

With respect to the international community, scholars point out that a sovereign state often applies property rights doctrine as a legal measure to manage state's territory.[405] Traditionally, property and sovereignty are taught as different branches of the law. While sovereignty belongs to public law, property is associated with civil and private law. It has been argued that the claim of sovereignty based on territoriality is relative to property doctrine.[406] Under the protection of property right which is well recognized by civilized nations, the general principle of international law uses the domestic legal conception in so far as property regime can apply to international law.[407] Due to the fact that there is no single international law relating to property *per se*, it does not signify property doctrine will not be applicable to the general principle of international law. Scholars point to "the sovereignty based

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[402] Michael D. Bayles *Principles of Law: A Normative Analysis* (D. Reidel Publishing, Dordrecht, 1987) at 76.
[403] At [78-79].
[404] Jan G. Laitos *Natural Resources Law* (Hornbook series, West Group, 2002) at 2.
[405] Barnes, above 181, at [222-223].: See also, Cotula Lorenzo *Property Rights, Negotiation Power, and Foreign Investment: An International and Comparative law study on Africa,* (PhD, University of Edinburgh, 2009).
[406] John G. Sprinkling *the International Law of Property* (Oxford University Press, Oxford, 2014) at [1-7].
[407] Sara Vadi, above 150, at [27-28].

territoriality."[408] Richard Barnes (2009) observes that in terms of the two functions of property doctrine involved with territorial sovereignty these include the private and public functions.[409] In regard to property law jurisprudence, there is 'the myth' that private right over property seems to be absolute, for example, that the owner may use his / her own property based on his/her interests, or on the contrary, that they can misuse property or even destroy it if the exercise does not cause significant harm to other neighbors. According to Morris R. Cohen and Felix S. Cohen, 'such myth' that "property is exclusive in its nature and not absolute" is a misinterpretation of the Roman language.[410] The original text is "*Dominium est jus utendi et abutendi re*."[411] This was interpreted as the right of property carries with it the right to use or to abuse a thing. With this misleading, it turns to the claim that the property is the right to use or misuse or even makes a bad use of the belongings. For Cohen, *abutendi* needs to be narrowly interpreted which means to use up or consume a thing, not to abuse it.[412] These commentators affirm that although the property right is still exclusive, it is not absolute. And even the exclusive right of property is not a right without limitations or qualifications.

Barnes suggests that although it is rare in international recognition of states in terms of the status of an owner, the state's exercising of its' right as the owner of property can be seen in the cases of the acceptance of condominiums, international leases, servitudes, international trusts, rights of transit across territory and territorial concession.[413] In this way, the negative rights of sovereignty (in other words, the public's interests of property) is the state's obligation, by not using territory against the community interest(s), so this customary international law has already been applied in the States. As discussed above, property doctrine contains private and public interests. Hence, both the private and public part of property should be applied in appropriation. Likewise, because states choose to accept the positive right, they cannot deny the negative ones.

Thus, it is clear that whilst states claim its sovereignty of air space for national security, they seem to ignore public responsibility for global transboundary pollution (see below). Within air space there are gaseous substances linked to the land. Therefore, it can be assumed that if the state claims sovereign right over the biosphere above its territory, it signifies the state accepts the ecological insights of sharing biogeochemical cycles with other states. At this point, although state sovereignty based on property doctrine is accompanied by liberty for freedom of resource use/exploitation, or loading GHGs to the atmosphere free will must be exercised with caution and foresight to prevent the damage for the future

[408] Barnes, above n 181, at [222-223].
[409] At [14-17], [21-61], [63-112],[152-155].
[410] Morris R. Cohen and Felix S. Cohen *Reading in Jurisprudence and Legal Philosophy in Volume 1* (Beard Books, 2002) at [29-30].
[411] At 29.
[412] At 30.
[413] Barnes, above n 181 at 225.

generation.[414] In other words, it is necessary to apply the precautionary principle while exercising its rights to use. [415]

Like Barnes mentioned, Cohen states that the truth is there are two sides, the individual and the social side.[416] So, while the private functions focus on the claim of private rights to all things and against all other States within a jurisdiction, the public function describes those property associations that are relevant in terms of certain public or community interest(s).[417] Although the public function has been recognized in international law, it is poorly activated. P. Taylor points that it is 'ill-suited' because of an inappropriate burden of proof, procedure of international tort law, and non-countervailing rights from others, even though the public function is acknowledged such as the no-harm doctrine. [418] Both functions can be seen in the Stockholm Principle 2, the Rio Principle 21, and Article 3 of CBD (see below). Roles of public function have emerged to maintain social order or international community interest(s) such as the common heritage and common concern.

In summary, whilst states claim ownership over *things* from above to beneath within a jurisdiction, they exercise its sovereignty in connection with private property.[419] Absolute right is often applicable in terms of sovereign territoriality. In this way, it can be assumed that if States recognize the private function of property in a form of territorial sovereignty or the owner of the land, States at the same time must acknowledge the public function of property. Normatively it is known that a State has sovereign rights over biotic resources, yet cannot use its territory to create trans-boundary harm to bio-environment. Once the biodiversity conservation was recognized as the common concerns of humankind, State must have been obliged by international customary law to protect its own integrity bio-environmentally. Although States establish treaties that emphasize a claim of sovereignty contrary to the concept of the commons and the community interests rather than biodiversity exploitation, customary law applies to States no matter whether they are party to the treaties or not. However, claims of sovereignty to protect territorial biodiversity as state's property have been used to justify the absolute authority over the term natural resources. Speaking of the reasons the private functions of property doctrine have gained more influence over the public functions, there are still several arguments to discuss below.

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[414] At [232-240, 83].
[415] Björn M. Funk "The Precautionary Principle" in Klaus Bosselmann and Ronald J. Engel (eds) in *The Earth Charter: A Framework for Global Governance* (KIT Publishhers, Amsterdam, 2010) at [197-199].
[416] Barnes, above n 181 at 30.
[417] At 112.
[418] Taylor , above n 192, at 118; Bosselmann, above n 284, at 148.
[419] Barnes, above n 181, at 222.

2.6 Biodiversity as the Earth Commons beyond Territorial Sovereignty

The Earth's biodiversity can be classified in the four main categories based on political territories.[420] The international community has recognized three of these categories.[421] Still and all, the remaining category has not yet received recognition. (1) Endemic biodiversity inhabits within state's jurisdiction. Or it can refer to native species or landscapes, having been protected by domestic law and international law. (2) Movable biodiversity migrates across nation states. Whilst some non-economic-value species, particular birds and insects may not be listed under the international conservation treaties, they are movable over the political lines and continents. (3) Both endemic and movable biodiversity inhabit within the common areas such as deep sea beds, high seas and the area of Antarctica. (4) The global biodiversity commons or "bio-complexity" which refers to interconnectedness between biodiversity and the biosphere such as biogeochemical cycles or ecosystem services that flow around the planet. Unlike tangible biodiversity, intangible flows of biodiversity are dependent on the quality of tangible biodiversity. Ecosystem services stem from healthy rainforests with the proper quality and quantity of biodiversity.

With respect to governing the global biodiversity commons, the existing international biodiversity law and governance that address almost all of the four categories of the earth's biodiversity is based on territorial sovereignty. However, this legal principle itself becomes a huge obstacle to prevent the loss of biodiversity in terms of comparing it with today's anthropogenic climate change. The unsustainable development that has led to environmental problems and resource depletion affects every nation state. In contemporary responses, there are also the four regimes that have been addressed including private, public, common-pool-management, and open-access regime. Yet most of them are dominated by private rights traditions and territorial sovereignty.[422] Critiques have been put forward in terms of international biodiversity law and governance for the Earth's biodiversity whereas while individual nation state attempt to avoid global community property rights, territorial sovereignty is affected through treaties related to biodiversity.

In connection with this traditional anthropocentric perspective, according to Ian Brownlie (1990) as cited in David Hunter, 2002, in the largest terms, international law has recognized only four types of property regime. These include the following: "(1) territorial sovereignty, (2) territorial not subject to the sovereignty of any state or states and which possesses a status of its own, (3) the *res nullius*, and the *res communis*, (4) territorial sovereignty extends principally over land territory, the territorial sea auxiliary to the land, and the seabed and subsoil of the territorial sea."[423]

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[420] Donna G. Craig, Nicholas A. Robinson, and Koh Kheng-Lian *Capacity Building for Environmental Law in the Asian and Pacific Region: Approaches and Resources*, Volume II, Chapter 20 (Asian Development Bank, 2002) at 605.
[421] At 607.
[422] Barnes, above n 181, at [222-223].
[423] David Hunter, James Salzman, and Durwood Zaelkb *International Environmental Law and Policy* (2nd edition, Foundation Press, NewYork, 2002) at [378-380].

Brownlie describes the idea that the concept of territory includes everything. A *res nullius* (things that have no owners) consists of the same subject-matter legally liable to possession by states while not as yet placed under territorial sovereignty. The *res communis*, consisting of the high seas (which for the present purpose includes exclusive economic zones) and outer space, is not capable of being placed under state sovereignty.[424] He states that in accordance with customary international law and the dictates of convenience, the airspace above and subsoil beneath state territory, the *res nullius*, and the *res communis,* are included in each category.[425]

In comparison to the Roman's property jurisprudence, "things" that exist on Earth can be categorized in different ways. In the Roman era, a thing was known as the *Res* in the Roman law found in Gaius[426] and Justinian of Institutes.[427] Both Roman institutions distinguished the kinds of *Res* and whether and who should or should not own. Both institutions are a backbone of modern property law accepted in many Western countries such as Holland, England, Scotland and Western Europe.[428] The Roman concept of *'res'* has a significant influence on international environmental law and treaties relating to biodiversity and its conservation. The Roman law used the term 'res,' meaning things, to indicate everything (tangible and intangible) that may be subject to rights or acquired by people based on use (utilitarianism).[429] Furthermore, some things cannot be owned because they belong to no one. Some things do not belong to humans at all. The law of things (Book II) is a part of the Roman legal system. Classifying things that belonged to certain categories was important to consider in the Roman legal system. The three aspects in Roman law include: the law of nature, of all of the people and of the state.[430] "The law of nature is the law implanted by nature in all creatures. It is not merely for mankind but for all creatures of the sky, Earth and sea."[431] The state law comprises the laws and customs made by the people for its own particular state, such as Athens state law and Roman state law.[432] The law of all of the people is a law that is common to every nation.[433] Thus, things or *res* as the objects of property were units of these legal systems.

In Roman legal sources, both Gaius and Justinian divided things into *divini iuris* and *humani iuris*. "*Divini iuris* is the thing's divine right. There are *res sacrae (sacred things*), *res religiosae (religious things*) and *res sanctae* (holy things) or things that were protected by sanctions.[434] Res *humani iuris* are either public or private and further divided into *corporeal* and *incorporeal*."[435] Justinian further divided Gaius's *divini*

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[424] At 379.
[425] At 379.
[426] Alan Watson *The Law of Property in the Later Roman Republic* (Oxford University Press, Oxford, 1968) at B.
[427] Paul Krueger *Justinian's Institutes:* Translated with an Introduction by Peter Birks and Grant McLeod (Cornell University Press, NY, 1987) at 55.
[428] D.G. Cracknell and C.H. Wilson *Roman Law: Origins and Influence* (HLT Publications, London, 1990) at [29-32].
[429] R. W. Lee *the Elements of Roman law: with a Translation of the Institution of Justinian* (4th ed., Sweet & Maxwell, London, 1956, 1986).
[430] Krueger *Justinian's Institutes*, above n 427, at [INST. I 2-5].
[431] At [2-5].
[432] At 2.
[433] At 3.
[434] Watson *The Law of Property in the Later Roman Republic*, above n 426, at B.
[435] At B.

iuris by adding *res nullius* (not owned or to be abandoned but can be captured), *res communes ominum* (cannot be owned and is open to everyone in general), *res publicae* (owned by the public) and *res universitatis* (owned by a particular group or community).[436] For example, theaters were built as the heritage of a community and used by its members.[437] Therefore, "those things that are given to humans in common by the law of nature are air, running water, sea and the shores of sea".[438] These things are subject to the private property of individuals by whom they are acquired (rules of capture).[439]

The Romans classified things based on their capacity for humans to use. However, they did not consider a number of relative aspects among these things. From this ancient perspective, all living things that exist on private land have no relationship in supporting other things for the land's prosperity. It might be out of date to apply the Roman property jurisprudence to comprehend biodiversity and its interactions. From the point of view of the Romans, it was difficult to see the ecological interdependence between bees and their honey. Thus, as an individual, a bee does not have value in and of itself, yet the values of bees depend on the honey they produce. Everybody wants honey, so they protect bees. Even so, they did not realize that bees require a variety of plants and a healthy environment in order to produce honey. As an individual, a bee belongs to no one and no state but rather to nature, regardless of the rules of capture. It is a natural pollinator; as such, this value does not count in the sense of property because it does not cause a direct impact to the landowner. Therefore, if Gaius and Justinian had realized about the relativities among things, they would have written that a bee could not have been owned or violated because of its work as a pollinator, and it had an intrinsic value. However, by limitation of codified law it is impossible to write every category of everything on Earth into written form and it would be unpredictable whether new things might emerge in the future, so legal interpretation is necessarily based on those types of property.

As pointed out in the previous chapter, the integrity of biodiversity and its complexity cannot be classified as private goods or public goods, rather by common goods. Flows of water cycles cannot be excluded from access as they generate from territorial biodiversity that locates within national jurisdiction. It might not be enough to determine biodiversity and its components based only on traditional property jurisprudence without ecological perspective. Even the Romans themselves recognize 'the law of naturalness' which is established by nature and implemented to all creatures. Intrinsic values of biodiversity as ecological welfare (ecosystem services) for all life are already recognized by the CBD. Thus, biodiversity as a whole should be interpreted in a context of common property, rather than by a private property.

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[436] Krueger, above n 427, at [55-57].
[437] At 55.
[438] At 55.
[439] At 57.

For Romans, *things* not owned by others could be treated as "objects", which could also be occupied and this included slaves. Slaves did not have intrinsic value in and of themselves; instead, their value relied on their dominants or masters and their evaluation depended on the marketplace.[440] As can be seen in the Roman law of property damage (*Lex Aquilia*) (cited in Bosselmann's work, 1995), the compensation for killing other people's slaves or four-legged livestock must be paid for with the highest market value of the former year.[441] Bosselmann suggests that legal measurements based on Romanic legal legacy emphasized the protection of property (*dominium*) and possession (*possessio*).[442] At this point, the value of protecting biodiversity would depend on the protection of property, so there was no relation between bio-environment and property.[443] Thus, human activities that caused impacts bio-environmentally would be viewed as a part of property damage, and it would be necessary to pay compensation to the owner because property rights had been violated. According to this traditional interpretation, it meant that protection of natural environment did not have value in its own right. Rather, it depended on the owner to choose whether to protect it or not. Because bio-environment became part of their property, it could only be managed in light of protecting property.[444]

At the time biodiversity came to the forefront of international issues, the property culture of civilized countries has been recognized as customary international norms. Because people throughout the world view biodiversity as commodities through the trade lens, private property becomes an inherent principle over the perspective of common. For the post WWII era until the late 1970s, international trade agreements flourished, based on a free market in relation to commodities. A large number of the Earth's biodiversity are state-based commodities, which require access to which can be made exclusive rights via international agreement. From a trade perspective, some resources are considered as finite, and others can be renewable, so those can be a tradeoff to the global market. The interests of property regimes over the earth's biodiversity commons brought nation states to cooperation to share the global commons, particularly with respect to marine biodiversity. This achievement can be seen in the Exclusive Economic Zone of the Law of the Sea. However, wealth distribution among developing and developed countries did not happen as it was promised to. On the other hand, the outcomes of global market in return have caused overexploitation. In addition, it has also currently created negative impacts to global environments.

[440] Bosselmann, above n 44, at 53.
[441] At 53.
[442] At 53.
[443] At 53.
[444] At 53.

Thus, it is argued that nation states cannot depend on the absolute rights which refer to the default position[445] (the situation was once popular before the debate or before any evidence has been deliberated) in against the common interest(s) of global community (here is ecological sustainability).

2.7 Global Trans-boundary Environmental Risks and Pollutions

In traditional practice, most nation states claim sovereignty to look after their own matters or security as distinct from the outsiders. Yet, it is still necessary to ask if state sovereignty is able to prevent the loss of territorial biodiversity from the rubric of anthropogenic climate change? How could sovereignty prevent the environmental risks or protect the citizens from environmental pollution/s from other states? To answer these questions the thesis investigates the categories of transnational environmental risks and global environmental pollutions.

From the early to current models of environmental risk management,[446] Jeanne and Roger Kasperson (2005) examine the four models for distinguishing trans-nationally and globally environmental risks/harms affect other neighbors and/or the entire international community.[447] These classifications of said risks can be identified according to naturally physical impact and structure/policy impact.

"Border-Impact Risk"[448] involves individual State's activities that affect human health, and ecosystems of others and/or along political lines. The risk often occurs in a shared resource such as mountain ranges, international rivers, and forests. International environmental law has recognized this type of trans-boundary environmental harm in several cases such as the Gabcikovo-Nagymaros case.[449]

"Point-Source across Border Risk"[450] illustrates the apparent point-source of accidentally related discharges and/or possible pollution threatening one neighboring country or region. International environmental law recognized this type of environmental pollution as acid rain that traveled from individual State to others via the Chernobyl case.[451]

"Structural/Policy across Border Risk"[452] consists of poor governance related to natural environmental risks and/or less considerable and distributes pathways of harm accompanied by national policies and/or the structure of social/economic development. The risk is overlooked and ignored by the

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[445] Bradly J. Condon *Environmental Sovereignty and the WTO Trade Sanctions and International Law* (Transnational Publishers, Ardsley, 2006) at 232.
[446] William C. Clark, Jill Jager, and Josee van Eijndhoven "Managinh Global Environmental Change: An Introduction to the Volume" in William C. Clark, Jill Jager, Josee van Eijndhoven and Nancy M. Dickson (eds) in *Learning to Manage Global Environmental Risks* (MIT Press, Cambridge, 2001) at [1-20]
[447] Jeanne X. Kasperson and Roger E. Kaspenson "Border Crossings" in Kasperson J.X. and Kaspenson R.E (eds) *The Social Contours of Risk: Volume II, Risk Analysis, Corporation & the Globalization of Risk* (Earthscan, London, 2005) at [217-248].
[448] At 239.
[449] Mason *The New Accountability: Environmental Responsibility Across Borders*, above 200, at 8.
[450] Kasperson and Kaspenson "Border Crossings", above n 447, at 241.
[451] Mason, above n 200, at [7-9].
[452] Kasperson and Kaspenson, above n 447, at 241.

determined efforts on the part of states to utilize unsound environmental systems related to transportation, energy/food consumption, over-exploitation of natural resources, massive clear-cutting tropical rainforests, accidentally released living modified crops, and so forth.[453] The lack of awareness related to highly potential risks to other States and region is evident in international concerns, which can be noted in several treaties. Even through these said risks have triggered the principle of common concern or precautionary, today's environmental harm measurement on an international level is difficult to respond.[454]

"Global Ecological Risk"[455] may be considered as a loophole of international environmental law and tort law. The said risks are results of those natural physical and structure/policy risks. Global environmental risks involve human activities as an entirety from the domestic to the global level.[456] States whether developed or developing countries are participating in different activities, yet producing the same result to the earth's ecosystem process. From tropical deforestations for massive agricultural purposes, clean-cutting mangrove forests to over-loaded fertilizers, loading GHGs to the atmosphere, both North and South countries are altering a globally functioning biogeochemical system. Climate change and global warming are clearly evident.

To be fair, the argument may point to the certain damage from those potential risks or the degree of harm that may cause impact to both economic and human health. Bosselmann (2004) points to the four types of environmental pollutions. Although the definition of harmful activities for those risks/threats is still unclear, the scholar refers to the common term of "pollution", found in the OECD Council Recommendation of 1974 in asserting that[457]

> "Pollution means that introduction by man, directly or indirectly, of substances or energy into the environment resulting in deleterious effects of such nature as to endanger human health, harm living resources and ecosystems and impair or interfere with amenities and other legitimate uses of the environment." [458]

Bosselmann has classified state's obligations for environmental (risk) pollutions in the four types.[459] There are "intra-territorial pollution," "trans-boundary pollution," "common areas pollution," and "global environmental pollution."[460] These obligations are affected by activities of States.

"Intra-territorial pollution"[461] refers to the inner-state-pollution occurring within state's territories and it stays within its original state or does not affect others. The burdens of international obligation and responsibility for protection bio-environmentally are therefore limited within state's jurisdictions. If the

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[453] At 241.
[454] Mason, above n 200, at 8.
[455] Kasperson and Kaspenson, above n 447, at 242.
[456] Mason, above n 200, at [7-9].
[457] Klaus Bosselmann "Environmental Governance: A New Approach to Territorial Sovereignty" in Robert J. Goldstein (ed) *Environmental Ethics and Law* (Ashgate, Aldershot, 2004) at [293-314].
[458] At 299.
[459] At 299.
[460] At [300-303].
[461] At 301.

exercises do not cause environmental harms to other states, international law does not affect national affairs without a signed treaty. At this point, State has free rights to alter or destroy its territorial biodiversity.

"Trans-boundary pollution"[462] refers to the pollution which originates within national jurisdictions yet the result affects the human health, and ecosystems of other states. Trans-boundary pollution has been commonly recognized in several ICJ cases such as the Trail-Smelter-Arbitration, Corfu Channel, and Lac Lanoux.

"Common Areas Pollution"[463] refers to the pollution that impacts the common areas such as the high sea and the sea-bed. Some are protected by treaty, for example, in Antarctica. This area beyond the limits of state jurisdiction could be polluted by State's activities. Under the common heritage of mankind, it is highly expected that the common areas must be protected as common responsibility.

"Global environmental pollution"[464] refers to the impact on the global environment that is the result of the anthropogenic climate change and other human activities that are related to it. Whereas this type of pollution does not limit state's pollution, common areas, or activities beyond its jurisdiction, rather it includes the entire Earth. As a result, whether in visible or invisible risks and pollutions, some structures and policies across boundaries could produce threats to other states. Global environmental pollution is now in effect to all states.

Those commentators point to the environmental risks and pollutions as a collective problem, rather than an individual one. However, this said risk presents a difficulty in traditional state responsibility in a matter for the burden of proof to point out exactly which countries cause such environmental harms. It should be concluded that these four types of risks/pollutions require a new obligation to the international community. These risks affect all living things and humans on earth beyond the traditional responsibility of states within their boundary line.

2.8 State Sovereignty over Responsibility

Although state sovereignty and overuse of its own biotic resources is a key concern of the international community, it cannot decrease the tension of absolute power of sovereignty. It is true to say that so far the CBD has not acknowledged that biodiversity deserves to be recognized as the global commons. Hence the common heritage of humankind has not been properly approved in the draft process. As the consequence of negotiation, State parties confidently affirm that they can manage biodiversity and its components properly based on its own rights and responsibility. In response, the CBD created the new type of common interest(s) known as "common concern of humankind" focusing on biodiversity

[462] At 302.
[463] At 303.
[464] At 303.

conservation which was lesser capable than the common heritage.[465] Even though this CBD's common concern has not been recognized as international legal norms, it was created by treaty-makers to serve the purpose of all state parties. However, Bosselmann points out that this CBD's common concern does not signify the same degree as the common heritage concern because it is focused on individual state's interests rather than on the global protection of biodiversity as community interests. From a legal perspective, it is necessary to note that the CBD's common concern of humankind focuses only on social aspects in relation to biodiversity which links biological resources to sustainable development. So, it does not gain a degree of a commonality of interests in terms of the environmental aspect.[466] Hence, it is less effective from a customary legal perspective. Additionally, the CBD's common concern has also not been successful reaffirming 'the overall fundamental principle' in reference to the common goal focusing on conservation, protection and restoration of the health and integrity of the Earth's ecosystem as stated by principle 7 of the 1992 Rio Declaration ("common but differentiated responsibilities").[467]

The CBD denied increasing the stronger legal measure of state responsibility to prevent environmental damage/s and the global commons obligation. On the other hand, it reaffirmed absolute sovereign rights of exploitation. This was reflected in Article 3 (sovereign rights over natural resources) and Article 15 (access to genetic resources). This focus is on striking the balance between rights of exploitation and state responsibilities based on 'general' cooperation (Article 5), national strategies, plans and monitoring-based annual year report. Additionally, the principle of state sovereignty confirmed by legal regimes is related to biodiversity conservation. For example, UNESCO, 1972 first introduced the concept of a 'common heritage of mankind' into environmental legal arenas.[468] The preamble states the following "…parts of the cultural or natural heritage are of outstanding interest and therefore need to be preserved as part of the world heritage of mankind as a whole."[469] This concept offers a notion that is legally-binding that enables a global approach to the protection of nature and the environment across state territories. However, natural heritage sites listed by the Convention are linked directly to state sovereignty, as stated in Article 4 and 6.[470] CITES, 1973, stated that "wild fauna and flora must be protected… and States are and should be the best protectors of their own"[471] The CMS, 1979, also stated that "wild animals in their innumerable forms are an irreplaceable part of Earth's natural system which must be conserved for the good of mankind" and humans have an "obligation to ensure this legacy is conserved and is used wisely." It is the duty of contracting parties of CMS to act as protectors of migratory species of wild animals that live within or pass through their national jurisdictional boundaries.[472] However, such duty is fulfilled at the state boundary. Similar to the CMS, the Wetland Convention 1971 emphasizes in Article 2(3) that wetland

[465] Lakshman and McNeely, *Protection of Global Biodiversity,* above n 176, at [352-353].
[466] Bosselmann, above n 284, at 151.
[467] The 1992 Rio Declaration, at Principle 7.
[468] UNESCO.
[469] At Preamble.
[470] At Article 4, 6.
[471] CITES, at Preamble.
[472] CMS, at Preamble.

sites listed by the convention did 'not prejudice the exclusive sovereignty rights' of the party where the sites were located.[473]

While the several treaties related to biodiversity have guaranteed that the sovereign right to exploit their own natural resources, they nonetheless call for the responsibility and obligation not to cause damage to the environment of other states or to areas beyond the limits of national jurisdiction. By ensuring biodiversity conservation/protection based on state's determination, Article 3 of the CBD restated the Principle 21 of the Stockholm Declaration, 1972[474] and the Principle 2 of the Rio Declaration, 1992, in advance of Principle 4 on sustainable development.[475]

Here the common interest of biodiversity protection has been compromised to sustainable development. For the Rio 1992, 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."[476] However, sustainable development does not focus on the erosion of biodiversity and bio-complexity, rather than preventing environmental pollutions and socio-economic development. Although Principle 21 of Stockholm and Principle 2 of the Rio ("Principle 21/2") are slightly different between environmental policy and development policy, state sovereign right to exploit earth's resources have still played an important peripheral and rudimentary role over the state responsibility. The significance of this is that Article 3 of the CBD based on sustainable development allows sovereign countries, within limits established by international law, to conduct activities within their own boundaries, even though such activities could possibly harm its own natural environment.[477] As long as its activities do not cause any visible damage to others, this principle will not be activated. For example, the clear-cutting of mangrove forests for shrimp farms under the right of development and exploitation conducted within a state's territory has never triggered claim against those principles. It can be said that the CBD allows State Parties to abuse its rights on their own biodiversity.[478] In this way, the attempt to balance rights and duties is unsuccessful because the *general* duties cannot trump the dominated sovereignty. The scholar suggests that state responsibility for environmental harm does not signify protection of the environment rather it is to protect state property rights.[479]

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[473] RAMSAR, Article 2(3).
[474] *Declaration of the United Nations Conference on the Human Environment* (Stockholm Declaration) (Stockholm, 16 June 1972; UN Doc., A/Conf.48/14, 11 ILM 1461 (1972)), at Chapter I.
[475] *Report of the United Nations Conference on Environment and Development* (the Rio Declaration) (Rio de Janeiro, 12 August 1992; UNGA/CONF.151/26 (Vol. I), at Principle 4.
[476] Michael Bowman and Catherine Redgwell *International law and the Conservation of Biological Diversity* (Kluwer Law International, London, 1996) at 20.
[477] Marc Pallemaerts "International environmental law from Stockholm to Rio: Back to the Future?" in Philippe Sands (ed.) *Greening International Law* (Earthscand, London,1993) at [5-7].
[478] Jóhannsdóttir, above n 175 at [203-207].
[479] Taylor, above n 192, at 118.

Arguably, the general interpretation with absolute power provides a change for states to overuse their resources or even to destroy them.[480] Adalheidur Jóhannsdóttir, in her thesis, *The Significance of the Default* (2009) argues that the sovereign right of states to exploit natural resources is not an absolute right, nor should they exercise such a right without legal obligation.[481] In this work, the scholar points to the legitimacy of the international legal principle, state sovereignty, which permits States to exercise its absolute sovereignty to exploit their natural resources, rather than protect them.[482] In her conclusion, over the long term, such an exclusive right runs extremely counter to successful global biodiversity protection and ecological sustainability.[483]

As discussed on the previous chapter, it should be noted that international law seems to leave the term 'natural resources' without exact clarification, signifying its interpretation would depend on the state's definition of the way such resources should be utilized and managed. For economic purposes, if an unfixed term describing natural resources is combined with the term 'biological resources' and 'ecosystem services', the result would include *everything* located in a state territory. This interpretation would benefit the state in determining which natural and biotic resources to exploit without respect to the common character of biodiversity or even carelessness to neighbors who are possibly sharing the same resources.

The point Jóhannsdóttir posits is clear, if we look back at the impact of massive irrigation in cases of international watercourse law. As seen in a case of the Aral Sea Basin in the former Soviet Union, the negative effects of over-exploitation and economic development based on the term 'natural resources' had ruined ecological and biological processes in this region.[484] Only the short-term economic growth has led to short-term health and wellbeing for the local people in this area. Under the reciprocal rights and duties of state in state sovereignty, rights to exploit can be easier to override mere duties to protect/conserve biodiversity. At this point the misuse of absolute sovereignty associated with exploitation rights over its own natural resources could cause harm to the citizens. State as it wants (free-will) may alter its own natural terrain such as the large-scale clear-cutting of mangrove forests (the inner-state-pollution) that could damage the entire marine ecosystem.[485] State parties may act autonomously as long as they do not infringe on the rights of other states. While no other states or global organizations have countervailing rights, the State is not subject to any limits in the exercise of its rights. Without the agreement on 'the common interests of humankinds',[486] balancing rights and duties as seen in Article 3 of CBD is inadequate.

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[480] Adalheidur Jóhannsdóttir "The Convention on Biological Diversity: Supporting Ecological Sustainability or Prolonging Denial" (2010) *Nordic Environmental Law Journal* 2010:1 at [81-102].
[481] Jóhannsdóttir, above n 175, at [203-204].
[482] Jóhannsdóttir, "The Convention on Biological Diversity: Supporting Ecological Sustainability or Prolonging Denial", above n 480, at [83-84].
[483] At 84.
[484] Stephen C. McCaffrey *The Law of International Watercourses: Non-Navigational Uses* (Oxford University Press, Oxford, 2001) at 260.
[485] Taylor, above n 192, at 85.
[486] Alexandre Kiss and Dinah Shelton *International Environmental Law* (Transnational Publishers, NY, 1991) at 16.

From the growing recognition of the ecological interdependence of the earth's biosphere, it has been suggested that whereas States are a part of the global domain they must share responsibility to protect healthy stability of the biosphere. Therefore, such sovereign right may be limited under "the rule of limitation".[487] However, the current international legal response appears 'ill-suited' to finding an adequate solution.[488]

2.9 Loose Procedure for Preventing States to Abuse its Own Rights

As discussed above, since the state's biodiversity is a part of the larger planet boundaries, one significant damage; for example, the policy of the clear-cutting mangrove forests will cause negative impact to oceanic systems. Although such activities occur within state boundaries, the harm results to the global commons. In this case, private international rules of environmental responsibility places state's liability to the traditional practice of international tort law.[489] Whereas the rule of state responsibility for preventing trans-boundary harm to environment was posited by the ICJ in *Gabcikovo-Nagymaros* case,[490] and in ICJ advisory opinion on the *Legality of the Threat or Use of Nuclear Weapons*,[491] the burden of proof and procedure make the environmental claim difficult to implement.

Under state sovereignty, a state is responsible for wrongful activities or omission relevant to legal consequences, which rely on general responsibility or obligations based on treaty agreed upon.[492] However, the said rule does not reflect 'overexploitation obligation' for its own resources within state territory. As mentioned the rule reaffirmed on the CBD's principle under Article 3 states that state parties have 'sovereign right' over biological resources on their own territory, with their own laws and policies to be applied. At the same time, the CBD recognizes that states further have a responsibility to prevent environmental harm to other states. Therefore, it is deemed that the contracting states hold a duty to look after and take care of its own territorial biodiversity resources in a good condition. Even so, this general responsibility was unclear to clarify the issue concerning environmental harms.[493] Whereas the CBD requires states to develop domestic plans, and policies to protect biodiversity and report information to them annually, yet those provisions are grounded on such weak language, for example, "as far as possible and appropriate".[494] Furthermore, there are no specific obligations relating to prevent harms in the sense that a state allows or ignores overuse of its own biological resources that impacts on the health of bio-complexity. Hence, a state could abuse its own rights by destroying its rainforests converting them to farmland.

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[487] Douglas E. Fisher *Legal Reasoning in Environmental Law* (Edward Elgar, Cheltenham, 2013) at 76.
[488] Taylor, above n 192, at 118.
[489] Xue Hanqin *Transboundary Damage in International Law* (Cambridge University Press, Cambridge, 2003) at [211-234].
[490] *Gabcikovo-Nagymaros Project (Hungary v. Slovakia)* [1997] ICJ Rep 7 at [33-34].
[491] *Legality of the Threat or Use of Nuclear Weapons (Advisory Opinion)* [1996] ICJ Rep 95, at [19-21].
[492] *Article on State Responsibility*, UNGA Res. A/RES/56/83 (2001).
[493] Patricia W. Birnie, Alan E. Boyle, Catherine Redgwell *International Law and the Environment* (Oxford University Press, Oxford, 2009) at 575.
[494] CBD, Article 14.

Adalheidur Jóhannsdóttir points out that under the common concern principle, state parties have a legal responsibility not to cause significant harm to its biodiversity.[495] This principle points to the emergence of environmental duty in the international community. In this sense, a state should seriously hold a duty for community and future generations to ensure that the safety of biodiversity/ecological integrity will be protected. Nevertheless, states have ignored the duty, rather claiming unlimited rights to development. Jóhannsdóttir describes the duties for preventing environmental damages covering biodiversity and its aspects.[496] The duty to have due care must meet the standard of '*due diligence*' to prevent damage that could potentially cause harm to biodiversity in habitats outside a state's boundaries.[497] The scholar has argued that although the CBD recognizes the biodiversity protection under the notion of common concerns to establish an *erga omnes* obligation, unfortunately, rules of state responsibility to prevent environmental harms is out as a poor procedure.[498] This will be discussed further in the next Chapter. For instance, if a state ruins the pristine forests or clear-cuts mangrove forests and even if the activities were to have a negative impact to the well-being of biodiversity, in terms of the legal method to proceed and burden of proof, it is unclear regarding which the ICJ will take the case based upon, due to the limits of international tort law.

Pure Taylor suggests that the existing environmental-harm machine fails to protect the bio-environment.[499] Firstly, the environmental damage is under the framework of the rule of state responsibility based on 'the international tort claim.' A potential damaged state would hardly make a claim based on the rule related to environmental harm if the causes of harm do not directly affect state property, economic or other shared resources.[500] Within the international tort regime, Article 3 of the CBD may be triggered unless the degree of the harm or damage needs to reach the term 'significance'. Furthermore, such causes of harm must be proven by scientific evidence and much of the compensated evaluation is based on economic justification. Under these conditions, the Article 3 is hardly activated. Secondly, state responsibility as well as state sovereignty limits right and duty within state territory. Political lines divide Earth's landscape in fragmentation.[501] Although many states have shared values of biodiversity functions in terms of international rivers and the biosphere, they do not always share the same goal to protect the ecological integrity of the river. Therefore, the connectedness and relativity among biotic and a-biotic life forms are being separated in different national conservation plans and policies. Indeed, biodiversity has influenced the environment at the planetary scale as it relates to the earth's ecosystem. Biological and ecological functions generate biogeochemical cycles sustaining all life, including humans. Thus, this ecological insight hardly exists as a fundamental object of biodiversity conservation/protection. Thirdly,

[495] Jóhannsdóttir , above n 480 at [84-85].
[496] At 84.
[497] At 84.
[498] Barnes above n 181 at [246-247].
[499] Taylor, above n 192, at [122-124].
[500] At 122.
[501] At 123.

environmental pollution limits international problems, regardless of global problems.[502] Finally, the notion of harm in this context is limited to harm to state property.[503] It can be understood that under the Article 3 of the CBD and international tort regime, both legal instruments focus on the fault of defendant states to assume environmental responsibility to prevent damages within and without national jurisdiction. Still in regard to today's situation, the anthropogenic climate change has made it more challenging to prevent such damages. The commentator points out that under the framework of territorial sovereignty, the environmental-harm obligation is within certain limits. Although the real damage occurs to biodiversity, state is often reluctant to take action against each other because of fear of reciprocity.[504]

2.10 Conclusion

The earth biodiversity commons is divided because of attitude of human/social boundaries. That is why the anthropocentric based state system has been accepted in international law. Nations state/s have a stronger sovereign right to exploit its own biodiversity without any responsibility for the earth commons, regardless the reality of ecological interdependences. The existing state responsibility is lack of a specific obligation to prevent global environmental harms related to biodiversity exploitation and overuse caused by state activities. This is because sovereign right to exploit is protected by international law and can even overthrow the common concern principle. State commits itself to international agreement because there are no serious obligations to enforce the broken states. At this point, if such global environmental harm happens, the burden of proof is limited for humans and economic damages, rather than ecological damage. If we believe in scientific rationality as discussed in the previous Chapter, it is necessary to reconsider this legacy of the Westphalian territorial-sovereignty.

[502] At 123.
[503] At 124.
[504] McCorquodale, above n 359, at 147.

CHAPTER 3: FAILED MANAGEMENT OF THE EARTH'S BIODIVERSITY COMMONS

3.1 Introduction

Based on the assumption in the previous chapter, this power of enclosure leads nation states to claim such absolute rights. It is argued that the earth biodiversity commons is framed by nation states. Westphalia sovereignty is exercised similar to the domestic law of private property. Whilst state has its rights over its territorial biodiversity, state has obligation for the international community.[505] This Chapter discusses what ought to be an appropriate regime for governing the earth's biodiversity commons comparing the concept of the sustainable common-property regime and the private property regime. It traces the historical roots of the enclosure movement over the commons and its impact on diverse wildlife management to argue that framing the earth commons brings biodiversity under private property regimes.[506] The consequences of the anthropocentric views of Locke's property theory[507] and Garrett Hardin's misinterpretation of common property lead to the failed management of the commons.[508]

Here the thesis argues for the common property regimes with sustainability. For today's ecological crisis, the better governance for the earth's biodiversity commons requires trusteeship and fiduciary responsibility, rather than the sovereign right-based approach. The instance of the trust-based approach can be found in the public trust doctrine in domestic legal practice that connects the ecological integrity of the natural environment to human health. With respect to biodiversity, duties of trust link private and public interest hence it can be reconciled by the concept and practices of sustainability to enhance environmental quality. Because biodiversity as a whole cannot be captured in categories of property, territorial sovereignty based property ownership is ineffective to lay claim over it. Whereas biodiversity protection/conservation becomes the common concern of humankind, States with their trusteeship could be obliged to take a duty of care and trust to protect global biodiversity for the global community. On an international level, although mutual restraint agreement is unpopular, it is necessary. The transformative approach shifts territorial sovereignty to state-trusteeship. For the commons, the approach will be valid fiduciary obligations to the state owner, binding every state to take responsibility for the global community. Biodiversity destruction causes both direct and indirect human health, so the state's activities that contribute the five main threats to biodiversity should be counted as *jus cogens*. So, state's ignorance to take precautionary or prevent principles should trigger *erga omnes obligations.*

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[505] Stephen J. Turner *A Global Environmental Right* (Routledge, Abingdon, Oxon, 2014) at [22-23].
[506] Vandana Shiva *Earth Democracy: Justice, Sustainability and Peace* (Zed Books Ltd., London, 2005) at [39-41].
[507] Keith H. Hirokawa "Some Pragmatic Observations about Radical Critique in Environmental Law" in Robert J. Goldstein *Environmental Ethics and Law* (Ashgate Dartmount, Aldershot, 2004) at [203-256].
[508] Weston and Bollier, above n 160, at 127, [138-139], [160-161].

3.2 Governing the Earth's Biodiversity Commons

As some have suggested "Earth is our ultimate shared resource."[509] Although this statement views the earth's biodiversity as a resource for humankind to use, it at least points to the perspective of the non-boundary aspect. In relation to environmentalist capitalism, Garrett Hardin's the Tragedy of the Commons is much more acceptable in terms of the variety of the academic literature, involving living resource conservation, international law and governance. Nevertheless, it has been suggested that Hardin made an incorrect diagnosis in governing the commons that has led to some negative results to the global commons until today.

In Hardin's Article, Hardin, in reference to Alfred North Whitehead, used the term "tragedy" to refer to an inevitable result.[510] Garrett Hardin's famous metaphor (1968) in overgrazing points out that the resource will be overexploited, if it is considered as a common good. The classical problem of resource depletion from Hardin's perspective was grounded on the Malthusian's theory of population growth, social change, and economic development.[511] Malthus's analysis emphasized the overpopulating argument that the limited resources necessarily meant limiting human population. Yet as there was no clear solution or "technical way"[512] to solve the population problem, so by avoiding the depletion of the commons it would be better to manage the commons properly. The commentator pointed out that what Hardin tried to say was the unregulated commons could lead to tragedy, so it did not seem that Hardin preferred to manage the commons under the private property system.[513] In contrast, it can be seen that Hardin indicated that "freedom in a commons brings ruin"[514] which seemed to upset liberal beliefs on property rights. In terms of the problems associated with the commons, Hardin further argued that whether removing some parts of the commons or dumping something into them, represented the challenges of the mismanaged commons system.[515]

For Hardin, the principles of ethics in the commons use were important, but not taken into serious account in the governing for the global commons. And as cited in Hardin, Fletcher stated "the morality of an act is a function of the state of the system at the time it is performed."[516] Thus, in the earlier American frontiers polluting the commons received favor by property regimes and under the pioneer conditions it was not unethical and the action did not cause harm. Hence, little if any public attention was directed at this sort of a problem. However, it had been suggested that after the population became denser and the

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[509] Ved P. Nanda and George (Rock) Pring *International Environmental Law for the 21th Century* (Transnational Publishers, Ardsley, NewYork, 2003) at 3.
[510] Garrett Hardin "The Tragedy of the Commons" in Baden A. John and Noonan S. Douglas (eds) *Managing the Commons* (Indiana University Press, Bloomington,1998) at [4-6].
[511] E. P. Thompson *Customs in Common* (the Merlin Press, London, 1991) at 107.
[512] Hardin, "The Tragedy of the Commons", above n 510, at 4.
[513] Eric T. Freyfogle "The Tragedy of Fragmentation" (2002) 36 *Valparaiso University Law Review* 2, at [307-337].
[514] Hardin, above n 510, at [7-9].
[515] At 9.
[516] Klaus Bosselmann "Losing the Forest for the Trees: Environmental Reductionism in the Law" (2010) 2 *Sustainability* 2424.

commons were lesser, redefining property rights would be required.[517] This comment points to the side-effect of applied property rights in governing the common resource. Hardin led us to the model that resources should be managed well to ensure sustainable use for all. The term "mutual coercion mutually agreed upon"[518] (MCMAU) was expressed to reconsider in terms of social responsibility. And it was also mentioned that the word "coercion is a dirty word to most liberals."[519] However, in regard to resource conservation, it was necessary to introduce restraint over the extravagant or over-consumptive behaviors involved with free use, particularly for a few groups. Mutual coercion as Hardin's examines in the taxing argument entails that "mutually agree to coercion is not to say that we are required to enjoin it."[520] Here, Hardin meant legal controls. As he pointed out that only a few people may be happy to pay taxes, however as a community, individuals accepted to voluntarily pay taxes because they had a responsibility for the community, so they realized that the money would support the community in return. In other words, coercion would help the community to avoid the horror of the commons.[521]

Like Hardin, Gordon H. Scott (1954) who studied economics in fishery management pointed out that while the resource was treated as a commons, the way of using such a resource was under the condition of individualistic competition.[522] From Gordon's perspective, he concluded that "everybody's property is nobody's property" as quoted in Elinor Ostrom's common-pool resource management (1997).[523] As mentioned above, all of these commentators seem to agree that rule-less management could have caused reduction of the common goods. So, whilst it is necessary to govern the use of the commons, the question is in which ways. Whether one may prefer property-rights regimes or others might favor common-property regimes, the key question must focus on the wellbeing of the commons for their own sake. So, failed management of the commons may come from the simple ideas that individuals acting with rational self-interests to make a decision that seems fit for their benefits, but lack concerns for the group.

3.3 The Roots of Failed Management throughout Enclosure Movement

In the first chapter, the thesis points out that state sovereignty over territorial biodiversity has been related to property doctrine for centuries, so state plays a role as the landowner to manage its own biodiversity. In terms of the evolution of habitat conservation/preservation/protection, this section traces back to the origin of property doctrine and the enclosure movement over biodiversity, including genes, species, ecosystems and landscapes. Since the commons belongs to no one, humans have been assumed that the commons are freely used. We have no concern about other lives that share and use those commons

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[517] At 2426.
[518] Hardin, above n 510, at [13-14].
[519] At 13.
[520] At 13.
[521] At 14.
[522] Scott H. Gordon "the Economic Theory of a Common Property Resources: the Fishery" in Baden A. John and Noonan S. Douglas (eds) *Managing the Commons* (Indiana University Press, Bloomington, 1998) at 17.
[523] Elinor Ostrom *Governing the Commons* (Cambridge University Press, Cambridge,1997) at [2-3].

as habitats. E.P Thompson pointed out that Hardin's Tragedy of the Commons was developed from the basic argument of enclosure (the English propagandists of parliamentary enclosures) and from a Malthusian's theory.[524] It is important to investigate how the concept of enclosure affects and has an impact on the decline of biodiversity.

It is fair to say that biological resource exploitation is therefore as old as human civilization. The carrying capacity of nature generates resource abundance to all creatures for subsistence. However, high demand over the land for agriculture, overharvest and the emergence of poverty has led to habitat decline and extinction. The original forests were a commons which primitive humans used for hunting, wood gathering, grazing and collecting medicinal plants. Additionally, forestland also served as wildlife habitats. It could be said that human civilization all over the planet emerged from the wilderness of so-called forest-jungles. Throughout civilization, the concept of hunting-gathering has been one of the oldest activities of humans and has remained in the cultures of many societies today. From the hunter-gatherers for subsistence to international commercial trade to game hunting for pleasure, legal measures have been implemented along the way to allocate values and rights to nature and its products. Historically the legal concept of land ownership over wilderness and wild things can be seen as deriving from two different Western patterns including as (1) the common legal system based in England and as (2) the property law of mainland Europe as it related to the civil legal system.

3.3.1 The Earlier Enclosure Movement in the Common Legal System

Firstly, after the Dark Ages (the Fall of the Roman Empire) in early medieval England, the Norman Conquest (William, Duke of Normandy) of England in 1066 had ruled the land and changed the pattern of communal resource arrangement of the native Saxon-freemen who had settled since Roman times, particular in the land ownership regime.[525] According to Wieling Hans, the new Ruler overlaid the resource allocation and managed it within a feudal economic and hierarchical social system.[526] In accordance with this system, forests and woodlands that had once been managed as commonplace were held under the Crown in exchange for protection and services.[527] At the time of the feudal law of early England, the King's court and the exchequer, with their common legal system, began as a means of clarifying rights and duties associated with those who occupied the feudal land grants.[528] In the medieval era, human's livelihood depended on many products sourced from forests and wildlife.[529] Wood from trees was used for fuel and warming in winter. Wild animals were hunted for food. In as much as this way

[524] Thompson *Customs in Common,* above 511 at [106-107].
[525] Hans Wieling "The History of the Ownership of Land" in Bernd von Hoffmann and Myong-Chan Hwang (eds) *The Public Concept of Land Ownership*: in Reports and Discussions of a German Korean Symposium held in Soul on October 7-6 1996 (Peter Lang GmbH, Frankfurt am Main, NewYork, 1996) at [14-35].
[526] At [26-27].
[527] Thompson, above n 511, at [107-109].
[528] Frederick Pollock and Frederick William Maitland *The History of England Law before the time of Edward I* Vol. II (Cambridge University Press, London, 1968).
[529] Victor Walter Eugene *Placeways: A Theory of the Human Environment* (Chapel Hill, University of North Carolina Press, 1988) at [34-35].

of living was then forced to change, these communal resource allocations in local villages were transformed into the basic concept of property, ownership and possession.[530] There was no common land. As cited by E.P Thompson, even Hoskins discussed the idea that "all common land is private property. It belongs to someone, whether an individual or a corporation, and has done so from time immemorial."[531] The origin of property developed into enforcement by dominants was a limited responsibility and an exclusive right in preserving the King's peace. As a result, the concept of property took precedence over the customary rotational system. This dominance can be found in the words of F. Pollock and F.W. Maitland, "the man of the thirteenth century does not say, 'I agree that you may have so many trees out of my copse every year,' he says, 'I give and grant you so much wood.'"[532] In this way, although "the rights of commons as things"[533] still existed, the notion of property was clearly created. Therefore, it can be assumed that between property and sovereign power these were not so different in the medieval legal system, where the lord was chief of all councils. In this system the monarch held absolute power.

At the earlier enclosure movement in England during 17th and 18th centuries, the conflict of land use between those who claimed their traditional common rights and the enclosure movement was intense. In terms of the commons, Thompson described that forests, chases, great parks and some fisheries were essential areas in a conflict of "common rights."[534] This would mean everybody claimed their customary legitimacy to use the forest commons. Disputes over common rights over the forests seemed to be getting worse, and its consequences were not only affecting the local people, but the forest as well. Thompson coded the word of Charles Withers after conducting several forest surveys that "[A]t the Wychwood this Forest egregiously abused."[535] Although a non-use solution was applied, lack of managing the commons created more tension among the locals and the authorities. As Thompson has suggested, by that time it was not only the deer tipping out of the forests to eat crops that was upsetting the local farmers, losing the income from honey collection also disturbed other groups. Observing this attitude, Thompson noted that this tension around common rights developed to create enclosure.[536] Dispute between the common rights and the new enclosure was addressed to the Court of Chancery over the use related to the commons. Two basic fundamentals had been made that "the landholder might regulate the limitation on grounds of "proper and natural equity" and "the common rights cannot be altered without the consent of all parties concerned therein."[537] Finally, in 1710, the first private bill of enclosure was passed in England.[538] Viewing this transition from a certain perspective, land preservation for wildlife and forest in

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[530] Pollock and Maitland *The History of England Law before the time of Edward I* Vol. 2, above 528, at [144-146].
[531] Thompson, above n 511, at 127; and W.G. Hoskins and L.D. Stamp *The Common Lands of England and Wales* (Collins, 1963) at 4.
[532] Pollock and Maitland, above n 528, at 146.
[533] At 140.
[534] Thompson, above n 511, at [103-109].
[535] At 103.
[536] At 104.
[537] At 108.
[538] At 109.

the earlier stage of conservation development tended to save specific animals from unauthorized hunting and preserved land for privilege hunting. The absolute authority of the Crown claimed its rights in particular animals and plants within its territory for its own interests. Fences and walls were built to separate common woodlands and private areas. In the history of the Anglo-Saxon common law system, this movement was known as the enclosure of the commons.

3.3.2 Fragmentation of the Pristine Forest

As discussed in the previous chapter, one of the main threats of biodiversity depletion is deforestation, and habitat fragmentation. Wildlife habitation is reflected in the term forest and it is one of the most complicated issues involved in regard to biodiversity protection (in-situ conservation) and other related issues (such as climate change mitigation). The root of forest fragmentation can be traced to the culture of enclosure management.

The Anthropocentric ideal of framing the forest reveals itself through the earlier enclosure movement and the extreme drive of private-property doctrine in western culture. In contrast, the King Asoka (ancient India from 273-232 B.C.E) was believed to establish the preservation of wildlife and regulated to ban the killing of wildlife[539] because of his own moral obligation. Therefore, there are no eco-centric contexts to point out that the forest has its own respect in this enclosure perspective, rather than commodity.

The term "forest" was used in a particularly jurisdictional purpose to identify the Royal Forest boundary of a group of trees or woodland. The words 'tree' and 'forest' derive from a completely different root. Tree ("*treb, treow*") is derived from Middle English, meaning 'dead wood or timber.'[540] Forest, in old French, "*foresta*", meant a woodland area, while "*forestis*" indicated an open space or unbounded area of hunting ground. According to Harrison, both terms were used to refer to an enclosed park.[541] In the original Latin, *foris* means 'outside'; in verb form, '*forestare*' means 'to keep out, to place off limits, and to exclude.' The term obtained from the Latin *foresta* is found for the first time in the laws of the Longobards (*Italia Langobardorum*) and the capitularies of Charlemagne. Thus, in the origins of forest preservation in the common legal system, the term ‘forest’ did not clearly mean to protect the forest as a commonplace, rather it referred to a privileged place preserved for royal hunting games. While the forest was preserved only for the king, all wild products such as animals and plants found within were also under such claim.

Before the Magna Carta emerged in 1215 during the time of King Henry II of England, a third of the country had been claimed as a preserved area.[542] Whiltlock points out that in the medieval era each forest and the wildlife within it were operated by a hierarchy of appointed officials, protecting them as part of the

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[539] Mohammad Naseem *Environmental Law in India* (Kluwer Law International, AH Alphen, the Netherland, 2011) at [428-430].
[540] Kim D. Coder "Words from the Woods: Derivations of Common Tree and Forest Words" (15 May 2013) USDA: Research & Development Search <www.fs.fed.us>.
[541] Robert P. Harrison *Forest: the Shadow of Civilisation* (University of Chicago Press, Chicago,1992) at 69.
[542] Gillespie, above 82, at 3.

king's property.[543] The forest was preserved for game hunting and reserved for the king and those who were granted licenses for using it. Ordinary people who lived in the forest retained *usufruct* right (right to use) yet did not own the land.[544]After the time of the King Henry II, a park or a deer park was popularly established and a permanent fence was constructed to claim private property of everything therein from the area outside it. Some animals, like a deer, were bred to serve the purpose of game hunting.[545]

In the late sixteenth century, while the absolute power of the monarchy was declining, the power of landowners was becoming increasingly stronger. The concept of landholding in terms of forests and wildlife preservation changed. Forests and woodlands that were not circumscribed by the Crown were being enclosed by a new power, that of the private landowner, to ensure their exclusive use. Forest preservation did not return to a status of the commons, rather it was transferred to the new types of owners. According to John Manwood, because of awareness about the decrease in trees and wild animals in the common land in England, there was an attempt to re-establish absolute authority over natural preservation for privileged purposes.[546] This effort can be found in the origins of forest preservation as preserve dominates in *A Treaties and Discourse of the Law of the Forest.*[547] Therefore, the common law system in terms of wildlife conservation and forest preservation depends on the private property right of landowners who can keep protecting everything on the land. Unfortunately, when a small group of elites took control and occupied one third of forestlands preserved for its interests and allowed a large group of farmers and daily laborers who lived outside the fence to suffer from poverty and hunger, forest preservation turned into a moral challenge and became an issue related to social justice. Due to ever increasing sociability within town settings and the demand for timber for vessel construction throughout Europe, forest/wildlife preservation suffered. This was as privilege interests owned by a few groups or families also faced challenges and struggled to maintain their privilege interests and survive and so forth.

From Roger Lovegrove's perspective, the historian study based on the Parish records shows that the enclosure movement and increasing agricultural productivity was not concerned with wildlife protection.[548] On the other hand, wildlife was seen as a pest, so the pest-control was applied. The record revealed that a number of native wildlife was killed in particular the south and east of England during the period of time.[549] Therefore, the enclosure regulation had changed the status of wildlife from the commons to property with a new command and control management. Wildlife that habited in the enclosure area was

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[543] Ralph Whitlock *Historic Forests of England* (Bradford on Avon, Moonraker Press) at [18-22].
[544] At 21.
[545] At 21.
[546] John Manwood *A Treatise of the Lawes of the Forest: London 1615* (Theatrum Orbis Terrarum, Amsterdam, 1976) at [1-2].
[547] Lewis Percival *Historical Inquiries, Concerning Forests and Forest Law: with Topographical Remarks, upon the Ancient and Modern State of the New Forest, in the County of Southampton* (T. Payne, London, 1811, eBook, University of Auckland electronic resource).
[548] Roger Lovegrove *Silent Fields: The Long Decline of a Nation's Wildlife* (Oxford University Press, Oxford, 2007) at [41-42].
[549] At 41.

under the control of those who took control over the lands. Since the new enclosure act was enacted, it had changed the pattern of the social relationship to the land, *the ancient (English) countryside* that once used to consist of a variety of landscapes was fenced and divided and the wildlife habitats were limited and enclosed. Significant differences of wildlife living between the open fields (the commons) and the new enclosures were that wildlife living in the enclosure land had become easier targets than the species that lived in the open fields.[550]

3.3.3 Communal Management of Mainland Europe of the Civil Legal System

Secondly, although the story of wildlife management was similar, it was not exactly the same in terms of communal management or communalism.[551] These traditional management systems are found throughout the world. Speaking of the early European mainland, wildlife/habitat preservation did not only limit the preservation of game hunting, it also included preservation for aesthetic purposes. However, those trees and wild animals belonged to the landholders. In early Germanic society, all land already had owners. The person entitled to the land was not the owner, rather was referred to as the 'estate owner' and was the owner of the real rights to the land. "Estates of the freehold" over the land were managed under the German concept of ownership *(Eigentum)* or an unlimited hereditary tenantable system *(Erbpacht)*, hereditary right to erect buildings *(Erbbaurecht)* and the concept of usufruct or beneficial use (*Nießbrauch*) in common lands.[552] During the fourteenth century between 1300 and 1350, agriculture development and timber harvesting caused significant deforestation. Wildlife and their habitats disappeared, the results led to starvation and plague (the Black Death).[553] Following this crisis, re-plantation and laws relating to sustainability were passed. However, conflict between private and public use over wildlife in common areas remained unsolved.[554]

Because wild animals were still a source of food and game hunting, hunting-gathering demanded conservation to preserve them in use. So this activity can clearly be seen between 1622 and 1755.[555] A decree by Mark of Brandenburg in 1622 prohibited the taking of the eggs of geese, ducks and other birds and destroying their nests. Illegal shooting was heavily fined.[556] A decree in 1686 established the protection of nightingales (*Luscinia megarhynchos*) because of their rarity.[557] A decree of King Frederick I of Berlin in 1705 stated that "we herewith decree that from now on all animals, including does, wild sows as well as hares and also birds, should be fully protected from 1 March to 24 August, and none of them

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[550] At 42.
[551] Fikret Berkes and M. Taghi Farvar "Introduction and Overview" in Berkes Fikret (ed) *Common Property Resources: Ecology and Community-based Sustainable development* (Belhaven Press, London,1989) at [1-18].
[552] Wieling "The History of the Ownership of Land" above n 525, at 24.
[553] Bosselmann, above n 284, at [14-15].
[554] At 15.
[555] Erich Hobusch *Fair Game: A History of Hunting, Shooting and Animal Conservation* (Arco Publishing, NY, 1980) at [150-151].
[556] At 150.
[557] At 150.

should be shot."[558] Later, the conflict between hunting and conservation was battled in the courts of absolute monarchs. As a result, the hunting season solution was introduced during 1723-1743 by setting forth a claim of the right of the landowners to hunt.[559] As can be seen, wild swan and ducks were to be protected during breeding season, while other animals could be hunted at any time.[560] However, in Mecklenburg in 1755, the closed hunting seasons and rules for the protection of game were cancelled because the legal provision was inconsistent with town development (urban expansion). In 1782, the town council of Lübeck decreed to re-establish these rules once more.[561]

In sum, unlike the enclosure system of the English common law system, in the mainland of Europe, in particular in German-speaking countries, had established regulations to preserve wildlife and forestlands based on common property management. In terms of forestry and living resource management, scholars have traced back to the work of Hans Carl von Carlowiz, who firstly published a book related to the concept of sustainability *(Nachhaltigkeit),* during the early 1660s.[562] The fundamental principle of sustainability reflected the ethical practice of use over forest in terms of avoiding greed and ignorance, because both will destroy the forest and that allows the irreversible impairment.[563] According to Carlowiz, H.C. von (1713) cited in Bosselmann (2008) it can be understood that economic activity with greediness or gluttony and ignorance of the consequence of ecological conditions (ecological integrity) will cause ruin.[564] Since then, the idea of sustainability has been commonly accepted "as synonymous with good forestry practice" in Germany.[565] The principle became legality because it was regulated in the Bavarian Forest Act of 28 March 1852.[566] However, after the feudal society system was abolished, property in land ownership entered into the public sphere as a political, moral and economic philosophy. By the late 17th century, the Enlightenment thinkers gave rise to *a new culture* focused on science and technological innovation throughout European countries and the new world.

3.4 The Existence of Property Rights based (Men's) Natural Rights

It can be assumed that the foundation of nature conservation/preservation based property doctrine that came from the ideal of preserving forest and wild animals for privilege dominants, especially found in the Anglo-Saxon common law systems is more popular than communal resource management. Hence, it is worth looking through several legal philosophers who attempted to develop their own argument of property theory to promote social change during their times. Their legal legacy has been continually noted until today. By the seventeenth century, secular thinkers like Descartes, Bacon, Newton and Locke

[558] At 150
[559] At 151.
[560] At 151.
[561] At 151.
[562] Bosselmann, above n 284, at [18-21].
[563] At 19.
[564] At 19.
[565] At 20.
[566] At 21.

gave rise to a new culture focused on science and technological innovation throughout European countries.

Regarding the origin of the European community, Hugo Grotius (1583-1645) recognized that the sovereign nature of God pointed to the Earth had been provided by God to Adam and his descendants in common.[567] Property rights as a natural right[568] referred to liberty in terms of individuals to have absolute rights over their property. Hence, Grotius's property rights related to ownership of *things*. For land use and the natural resource exploitation, Grotius viewed property rights as a "fundamental right of necessity" to use and consume resources that are necessary, required for people's own survival, so it was conventional rights of human society.[569] As he pointed out "all men (humans) have absolutely a right to act as necessary to provide whatever it was necessary to the existence... of life and this is interwoven with the every frame of human society."[570] Grotius described private rights over things (the *suum*, one's own) as "the original, God-given use-right" that is because God provided those sustenance needs for human life.[571] In this way, Grotius argued for private rights on behalf of men (humans) based on the state of human nature in a context of moral significance.[572]

However, the matter of the origin of property rights has been changed far beyond the mutual balance of human's private rights and duties over God's sovereignty. Locke's *The Two Treaties* (1689), which is divided in the First and Second shaped a new form of property by generating a moral justification for the enclosure of lands, defining property rights and stemming notions of commonwealth.[573] And finally, as they related to the sovereignty of all (West) human beings over the land and natural products, the works of Locke completely changed the concept of property in landholding and possession of things.[574] The commentator points out that Locke's philosophy underpins the area of private property rights and had a huge influence on the natural resource regimes at domestic and international levels.[575] Although Locke's works were considered an achievement concerning the natural rights of property, his philosophy was built on other philosophers such as Richard Hooker (1554-1600), Hugo Grotius (1583-1645), Thomas Hobbes (1588-1679), Samuel Pufendorf (1632-1692), Robert Flimer (1558-1652) and in particular, the Roman law of property.[576] Nevertheless, it is important to note that there was little or no room for women's rights, or

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[567] Sean Coyle and Karen Morrow *the Philosophical Foundations of Environmental Law: Property, Rights and Nature* (Hart Publishing, Portland, 2004) at [17-19].
[568] Barnes, above 181, at [30-36].
[569] Coyle and Morrow, *the Philosophical Foundations of Environmental Law: Property, Rights and Nature* above n 567, at [22-25].
[570] At 25.
[571] At 25.
[572] Barnes, above 181, at [170-171].
[573] James Tully *An Approach To Political Philosophy: Locke in Context* (Cambridge University Press, Cambridge, 1993) at [142-143].
[574] James Tully *A Discourse on Property: John Locke and His Adversaries* (Cambridge University Press, Cambridge,1980) at [3-50].
[575] Barnes, above n 181, at 13.
[576] Tully *An Approach To Political Philosophy,* above n 573, at [7-9].

animal's rights because these did not exist at the time of the medieval era, since male dictators dominated society.[577]

According to Locke's "the state of nature,"

> "...a state of perfect freedom of acting and disposing of their own possessions and persons as they think fit within the bounds of the law of nature. People in this state do not have to ask permission to act or depend on the will of others to arrange matters on their behalf. The natural state is also one of equality in which all power and jurisdiction is reciprocal and no one has more than another. It is evident that all human beings – as creatures belonging to the same species and rank and born indiscriminately with all the same natural advantages and faculties – are equal amongst themselves. They have no relationship of subordination or subjection unless God (the lord and master of them all) had clearly set one person above another and conferred on him an undoubted right to dominion and sovereignty."[578]

Like Grotius, Locke viewed that God gave nature to us in common. Individual rights over things were shared by means of humankind's power over the things around us, as provided by 'the sovereignty of God.' Locke makes a claim for private property rights as a sort of natural right of individuals to protect their own property.

In addition, private property rights as created by Locke's philosophy allowed the natural right of use for humans over other creatures or lands with reason and freedom.[579] Thus, the condition of life and freedom was the right to "self-preservation" in obtaining basic needs for living, which are food, land and shelter. In order to gain individual rights, people have to make *'the suum'* (one's own) through the action known as "labour."[580] The commentators suggest that "whatsoever he removed out of the State that Nature hath provided, and left it in, he hath mixed *his "labour"* with, and joined to it something that is his own, and thereby makes it his *Property*." [581] Labor created the right of property without the consent of anyone else from the beginning of God's creation.[582]

Scholars point out that Locke's labor theory as derived from the idea of work that can be found in the older Saxon and German freemen in the early ages before the Norman Conquest of England.[583] Locke's argument did not only rely on Biblical authority, it was also reliant on the legal concept of "work" found in Roman law, which is essential in landholding found in both the modern Western legal system, as well as common and civil law. Based on the Romanic concept of work, the landholder took possession of the land by clearing it, constructing buildings and preparing fields for crops and pasturage. Therefore, Locke claimed that outcomes of labor were property, which came from a realization of rights and duties to self-

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[577] Roderick Frazier Nash *The Rights of Nature: A History of Environmental Ethics* (University of Wisconsin Press, Madison, 1989) at [5-7].
[578] Locke John *Two Treaties on Government: A Translation into Modern English* (Industrial Systems Research, Google eBook, 2009) at 106.
[579] Coyle and Morrow, above n 567, at 42.
[580] At 48.
[581] At 49.
[582] At 49.
[583] Peter Raine *Who Guards the Guardians* (University Press of American, Lanham, 2003) at 217.

preservation through deliberating freedom and reasonable action.[584] It can therefore be understood that the fulfillment of God's intention in giving his dominion to all human beings in common contributed to the act of the labor of individuals who enclosed lands, and the improvements made to the land created by private property.[585] In Locke's context, every individual gains property by his or her own work. By improving or innovating or removing *all things* from the state of nature, they *mixed* their labor to those things and therefore have a right to claim it as property.

3.5 Property Rights over Wilderness in Locke's Views

According to James Tully, Locke's interpretation of the state of nature provided the strong argument to international politic over the new found land and all things during the colonial time.[586] So, in terms of the original jurisprudence of private property rights, there are no relationships between property and environmental protection. It is important to note that the law of nature analyses by Locke focuses on the benefits of humans in use and consumption on natural resources.[587]

Locke’s anthropocentric theory of property has dominated domestic and international law related to every life form within property (biodiversity). Wilderness is 'waste' in Locke’s eyes.[588] Wild things need to be tamed and/or owned. The Earth was not to remain a commons and uncultivated; human beings had been commanded by God to subdue the Earth for their benefit.[589] The value of nature or things (instrumental values of nature) depended on their usefulness to humans. Cultivating land had more value than letting land go to waste.[590] Locke's property theory had encouraged the enclosure movement over the commons based on economic agriculture.[591] Those works of Locke had reflected the fundamental structural changes in the social relations of agricultural production in England and other British colonials. It was known as the development that finally came to dominate the world until today. As mentioned, due to Locke's agrarian capitalism, human's labour divided the commons to private property, so the outcome of hard work was counted as value. Without labor, land had no value. Regarding Locke's perspective, he remarked upon those who applied commercial interests in terms of resources from the early days of colonialism.[592] It seems that those Western masters had a duty from God to tame and educate the barbarians. "Waste land" was the common lands where native peoples lacked the kind of 'civil society' similar to that of Europeans.[593]

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[584] Coyle and Morrow, above n 567, at 50.
[585] At 51.
[586] La Barbera, above n 273, at [57-59].
[587] Tully, above n 573, at 11.
[588] Hirokawa, “Some Pragmatic Observations about Radical Critique in Environmental Law” above n 507, at [225-281].
[589] At [233-234].
[590] At 233.
[591] Wood *John Locke & Agrarian Capitalism*, above n 274, at 63.
[592] Barbara Arneil *John Locke and America: The Defense of English Colonialism* (Oxford University Press, Oxford, 1996) at 8.
[593] Tully, above n 573 at [142-143].

Pocock pointed out that this insight built the motivation of early Western settlers to search for other than that of their own in Europe. They truly believed that native peoples who did not cultivate their lands by practice of commercial agriculture and did not mix their labor with their lands should not be able to claim private property rights over land.[594] It was therefore a duty of the new Western arrivals to improve such wastelands. So, cutting forests down for timber became therefore a duty of humans. Mixing actions of labor and work was a rightful claim in terms of property ownership. Some may argue that these perceptions were used as a lawful argument to destroy the legitimacy of indigenous people.

In the case of the early American settlers claiming their right over new land, they relied on Locke's argument that all other lands used for hunting and gathering did not represent a true claim and that those lands were still wastelands available for European possession.[595] It seems Tully observed that Native American Indians were imbued with their own way of living which was different and unlike Europeans. However, they lacked legal systems and had no political society. He claimed they lived in nature (the state of nature.) Therefore, living in a state of nature meant that they had no motive to acquire more than they needed and did not apply their labor to any lands, only to a few small areas of enclosed and cultivated lands.[596] Unfortunately, the general characteristics of wilderness can be easily perceived as the commons, waiting for cultivation and it has no owner where it is free for occupancy when there is plenty of land. Whereas Locke's property rights may not have harmed eighteenth century society, since there was enough land and resources in the world, when land and resources became limited, competition among those who wanted more land and resources created a serious dispute, even war. Locke himself had also realized the negative effect of absolute liberty in private property rights (overuse of its own property right).[597] As a result, restriction (negative right) also driven from natural law was considered as due care to neighbor and no harm doctrine.

Moral forces existed in terms of Locke's property rights. Indeed, Locke's philosophy did not reject the wisdom of God. Due care for God's creation was deployed as a backup for social equality. Locke's argument, written in the First Treaties and based on the Genesis text, diminished the power of totalitarian or absolute government on preserved lands and monopolized common areas for their own sake. Locke stated that "God blessed them and said to them, be fruitful and multiply; fill the Earth and subdue it; have dominion over the fish of the sea, over the birds of the air and over every living thing that moves on the Earth."[598] Hence, Locke meant Adam was granted private dominion over the Earth and lower creatures. However, this private dominion was given in common with all human beings "to use the wild animals and its products of the Earth as required for sustenance."[599] This common right is not property, but a basic

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[594] John G.A. Pocock "A discourse of sovereignty" in Nicholas Phillipson and Quentin Skinner (eds) *Political Discourse in Early Modern Britain* (Cambridge University Press, Cambridge,1993) at 418.
[595] Tully, above n 573, at [166-168].
[596] At [138-147].
[597] Coyle and Morrow, above n 567, at [41-43].
[598] At 41.
[599] Coyle and Morrow, above n 567, at 42.

liberty (natural right) of use, which is not exclusive posterity, "as should successively grow up into the needs of them, and come to be able to make use of them."[600] Nevertheless, the goods created through the attempts of individuals using their natural rights to food and shelter was their sole occupancy. With this sole possession, each individual had a right to defend his/her own against others who may violate it.

It can be understood therefore, that God gave the Earth to humans in common, and reasons for making use of the Earth to their advantage. Earth, therefore, has been given for human support and comfort. Here, Locke made a distinction between natural rights and natural law.[601] Natural right is given to humans because it is a God-given use-right to us.[602] However, natural law resulted from externally forced responsible constraints, because those things (that humans cannot create still) belonged to God's property.[603] In other words, even though humans have a right by nature to use all land and control all creatures, those lands and all life forms still belong to God. So, whilst using them, it needs to be used with respect and responsibilities. It still has an unanswerable force that humans cannot control. With this concern, Locke implied "husbandry ethics" into the idea of responsible use, which means that humans are bound by duties of care as a moral duty.[604] In other words, humankind therefore had a right to use and 'the duty to take care' of and protect and preserve the property of God in common depending on how much work (labor) they employed. At present, such duty was known as the 'husbandry or stewardship concept.'[605]

Thus, Locke encouraged the effective utilization in products obtained from labor.[606] This can be assuming that the landowner did not have the right to destroy the basic elements of production derived from property rights. As mentioned previously, Locke pointed out that the Earth's surface had been enriched with natural resources for humankind's sustenance and convenience, that no individual had a separate and exclusive title on such land, rather a common right of use related to these resources. Therefore, while using resources, "there must out of necessity be a means to appropriate them some way or other before they can be of any use, or at all beneficial to any particular men."[607] However, Simmons points out that this limitation focuses on the use, which does not mean to the limits of resource exploitation.[608] Therefore, Locke's meaning on land-use in the way of appropriateness was the act of labor and money transfer. Regardless of social arrangements, the Two Treaties suggested how to transfer property to wealth, which

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[600] At 43.
[601] Tully, *A Discourse on Property: John Locke and His Adversaries,* above n 574, at [60-61].
[602] At 60.
[603] At 61.
[604] Coyle and Morrow, above n 567, at [44-47].
[605] At 44.
[606] At 46.
[607] At 47.
[608] John A. Simmons *The Lockean Theory of Rights* (Princeton University Press, Princton,1994) at 285.

became known as "the theory of wealth."[609] Simons created a link between property and economic development.

Thus, it is important to note that the duty to cultivate wastelands (or rights to development) was developed from the concept of Locke's law of nature based on the interests of men (humans), and later became the Law of Nation in the early eighteenth century. Locke's argument was coded into domestic law throughout Europe.[610] So, now it interplays with the international legal principle of state sovereignty. For today's world, the commentator points that sovereignty shares a close conceptual relationship with property and territorial sovereignty has been originated by the concepts of private ownership.[611]

3.6 Resource Exploitation and the Image of Being Wealthy

A different version of economic capitalism and individual rights over things in terms of private interests and collective goals becomes more acceptable. It can be seen in C.B. Macpherson's (1962) "possessive individualism."[612] Thus, a modern property right defined by a borderline driven by economic sectors existed as legal instrument and, until recently, had no relationship with environmental protection. Macpherson supported an economic approach to property rights. He observed that Locke raised the limits of property rights on money, which he referred to as "the agent of transfer for property."[613] He noted Locke's statement that money allowed humans to enlarge the scope of their possessions and that unequal possession of gold and silver did not hurt anyone.[614] Due to the value of money, its' temporality overcomes products or the valued minerals, as its acts as potential future goods for those restricted to certain kinds of labor based on production. Macpherson points out "Lock also justified, as natural, a class differential in rights and in rationality, and by so doing provides a positive moral basis for capitalist society."[615] Locke's fundamental insight that labor was one's own property made the theory of property external to society and justified the acquisition of more property without social obligations.

However, it creates rich and poor groups in a society. Although Macpherson's possessive individualism, based on the writings of Locke was narrow, it was nonetheless influential to the economic sector. His concept identified the individual property owners as the fundamental unit of society, and they could do as they wished, in accordance with their own free will, as a function of possession and independence from others. Being human meant freedom from relations with others, except those with whom one freely contracted for one's self-interest (contract law.) The individual was viewed as worthy of respect in terms

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[609] Crawford B. Macpherson *The Political Theory of Possessive Individualism: Hobbes to Locke* (Oxford University Press, London, 1962).
[610] Emer de Vattel "The Law of Nations or the Principles of Natural Law, Applied to the Conduct and Affairs of Nations and Sovereigns, with Three Early Essays on the Origin and Nature of Natural Law and on Luxury" in Knud Haakonssen, Bela Kapossy and Richard Whatmore (eds) *Natural Law and Enlightenment Classics* (Liberty Fund,Indianapolis, 2008) at [34-36].
[611] Barnes, above n 181, at 13.
[612] Macpherson, above n 317, at 3.
[613] At [211-213].
[614] At 211.
[615] At 213.

of his or her own person or capabilities and owed nothing to society. Hence, society consisted only of relations of exchange between property owners, "and the tasks of political society were the protection of property and the maintenance of an orderly relation of exchange."[616]

Consequently, there was no longer any physical restriction on natural resources or land acquisition. Lockean's money transfer theory opened access to unlimited exploitation. Since everything that mixed with labor could become property in intangible and tangible forms, the problems of securing the individual right to claim the products of nature from human power became a new issue. Hence, by the time that private property was developed, it was insecure. It was a duty of society to create legal and physical instruments of defense. So, this concept of economic capitalism was developed into property law.

3.7 Limitation of Exclusive Private Rights

As mentioned, previously, while encountering resource starvation, limited land for cultivation and a growing population became problematic. Locke's motivations drove the early Europeans in search of the New World, to be acquired through their own labor and work. Locke's political and moral philosophies generated rightfulness to human beings over wilderness. It is fair to say that private property rights exist in all (liberal) societies.[617] This is since the acquisition of property and the notion of ownership in all things found within land had become a universal norm. Due to the notion of utilitarianism that 'things' can be owned, mainstream economists point that natural resources are linked to the notion of property under the word 'use.' Its main objective is to protect the instrumental values of those objects for the owners. In other words, private property rights are a legal measure to protect exclusive use of the owners against others. Utilitarianism creates economic values over Nature. With a favor of property, values of 'things' can be used in completeness, exclusivity, and transferability.[618] At this point, the value of 'things' exists not because of the things on their own,, rather due to their values of use, and property serves to preserve such a use for its owner. However, there are some natural elements that property interests that cannot arrive even though they exist beneath and beyond the private land. This is because there were no rules of capture that existed that were available to them and no human labour can create them such as climate and ecological and biodiversity functions (known as ecosystem services). So, private property rights on their own do not have any connection with those natural elements. Even though the said elements contain instrumental values to the landowner, they also have intrinsic value for their own sake.

Because in general the landowners misunderstood that the private property rights are absolute, sometimes the treatment of property owners may impact the surrounding communities, and cause environmental problems for the public. Even so, the connection between cause and effect was difficult to prove in court. In the case of modified weather, such a connection is recognized in law in the states. Ray Jay Davis (weather modification, 1968) as cited in G.N. Jones, suggested the clear metaphor of

[616] At 3.
[617] Bayles, *Principles of Law: A Normative Analysis* , above 402, at 76.
[618] Laitos, *Natural Resources Law,* above n 404, at [2-3].

connection, for example, unlike wild birds flying over land, clouds are as to a "river flowing through our skies."[619] His analogy highlights the characteristics of moisture in the atmosphere.[620]

From an ecological perspective, this image can be referred to as the connection of the flow of biogeochemical cycles from its biotic sources on land to the sky over different political land. Davis pointed out weather modification by controlling nature's powerful forces for producing various changes in natural environment for human benefits serves as implicit evidence of human-interference on natural systems.[621] At this point, the ecological connection brings an obligation for the public or the commons to private property rights. For Davis, the natural phenomenon has been captured within a legal context in the conflict between public and private property law. Those who altered the weather due to weather modification may be liable for their negative resources.[622] So, those harmful activities that occur within property and can transfer to other property may be covered in tort law. However, with respect to tort law, it cannot prevent landowners destroying biodiversity and landscapes. Tort law would be triggered after damages occurred. Whereas environmental compensations would go to the damaged property owner, they are not for environmental restoration itself. From an environmental perspective, tort law is ineffective to prevent biodiversity loss.

In addition, limited private property right is covered by "servitude and zoning" in property law, in particular in terms of land-use. The limitation (negative rights) of the landowner can be for the benefit of particular private persons or for the public.[623] In English common law the right exists to stop landowners from blocking a neighbor's window, interfering with the flow of air in a defined channel, removing an artificial support of a building, and interfering with the flow of water in an artificial channel.[624] In the American legal system whether common law or statutory law, the limitation such as servitude; easement, profit, and covenant is found in many cases. Easement and profit are the negative rights of a person to prevent or limit the landowners doing certain kinds of things on his or her land or to allow another person to go on to land. For example, this can be seen in terms of pipelines, driveways and underground utilities.[625] In a case of biodiversity conservation in Australian and New Zealand law, by preventing the landowner from carrying out a particular harmful damage to intrinsic values of biodiversity in his or her land, it would require covenant (negative rights.)[626] Covenant (or trust-based-system) is a negative right 'running with' the land by agreement similar to easement and profit.[627] Yet unlike mere contractual promises that bind

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[619] Jones N. Gregory "Weather Modification: The Continuing Search for Rights and Liabilities" (1991) 2 *BYU Law Review* at [1163-1199].
[620] At 1163.
[621] At 1164.
[622] At [1165-1166].
[623] John B. Ruhl, Steven E. Kraft and Christopher L. Lant *The Law and Policy of Ecosystem Services* (Island Press, Washington, 2007) at [107-109].
[624] At 108.
[625] Laitos, *Natural Resources Law* above 404, at [25-26].
[626] Kellie Ewing "Conservation Covenants and Community Conservation Groups: Improving the Protection of Private land" (2008) 12 *NZ JEL* 315 at [315-337].
[627] Bayles, above n 402, at [112-113].

only the contractor, covenantal agreement binds anyone who is in possession of the land.[628] Due to the fact that it is difficult to prove, covenantal agreement required codification in writing in the deed. At this point, the limited private right, a covenant in the deed, "should be construed to include only what is necessary for the purpose, and should be implied or taken to run with the land only where necessary for the reasonable use of property."[629]

3.8 Communal Property Systems with Sustainability

It is important to realize that much terrestrial biodiversity have been successfully managed under the traditional rules of the common-property system for centuries. Indeed, the system has been of interest to various international organizations such as the 1983 UNESCO's series of regional studies on traditional knowledge and management of coastal system, and even FAO in small-scale and community-based fisheries.[630] Ostrom suggests that biodiversity commons can be properly managed as *common-pool resources*, refers to the mixed systems of private and shared property rights where there are no exclusive rights against others from access and use. However, property rights are not absent, but will be carried on in order to govern the limitation of use of the members.[631]

It might be a mistake in terms of language if one argues that devaluing liberty and delimiting private property rights over land-use or resource exploitation are pro-communism. Arguably, the common-pool resource system may relate to *res universitatis* (public domain) that refers to *things* that are owned by a particular group or community. Whereas there is no absolute power of the individual in this common-pool system, successful governance must be based on the principle of sustainability (see below). Everybody as a member of community has a right to share in the fruit of the commons, so wealth and prosperity flourishes. Basically, community can participate to protect its own resources, and when it is protected, all members should enjoin in the fruitfulness of sustainability. Bosselmann (2013) observes that even Karl Marx pointed out that nature, not capital or labour refers to the ultimate source of all wealth.[632]

According to *Governing the Commons,* Ostrom proposes the common property system a social institution based on an allocation of collective rights that involve limitation of use and exploitation. Her "Institution Analysis" suggests we develop an institution to govern the commons, and to do this according to different levels of analysis, which are operation, and collective and constitution choice.[633] The institutional model

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[628] At 113.
[629] At 113.
[630] Berkes and Taghi Farvar *Common Property Resources: Ecology and Community-based Sustainable development*, above n 551, at 5.
[631] Elinor Ostrom, Roy Gardner, and James Walker *Rules, Games, & Common-Pool Resources* (University of Michigan Press, Michigan,1994); Lee Anne Fennell “Ostrom’s Law: Property Rights in the Commons” (2011) 5 *International Journal of the Commons* 1, 9 at 15.
[632] Klaus Bosselmann "The Legacy of Rio+20: saving the commons from the market" in Laura Westra, Prue Taylor, and Agnes Michelot in *Confronting Ecological and Economic Collapse* (Routledge, Earthscan, Abingdon, 2013) at 279.
[633] Elinor Osterm *Governing the Commons: the Evolution of Institutions for Collective Action* (Cambridge University Press, Cambridge,1990).

highlights eight core principles which include: (1) clearly defined boundaries, (2) appropriate rules, (3) collective choice arrangement, (4) monitoring, (5) sanction, (6) conflict resolution mechanism, (7) rights to organize regimes, and (8) nested enterprises. [634] At the local community level, the common property regime works effectively. And also Ostrom observed that a number of forests all around the world have been sustained by the local communities that manage and use them. From Ostrom's point of view, successful communities have to be able to adopt local rules and enforce them in line with the law. Effective rules may be able to determine who is a member of the community, or who can access resources, or at which time and in which way. Based on local participation, Ostrom's model of the common-property regimes works with the complex mathematics to measure the problems in which the members have violated their 'credible commitment' while resource scarcity occurs.[635] Ostrom points out that a safe, advantageous, and credible commitment can be undertaken whilst individuals are presented with rules that meet her eight core principles. The commitment is to follow the rules so long as (1) most similarly situated individuals adopt the same commitment (legal honest) and (2) the long term expected net benefits to be achieved by this action are greater than the long term expected net benefits for individuals following short-term, dominant actions.[636]

Speaking of larger levels of social organizations, Ostrom suggests that communities with democratic participation are enabled to create effective rules, synthesized from careful discussion and can put forth arguments if a situation changes to find a way to adjust the rules. To make their governing system resilient, it has to be adaptable over time, and members have to develop trust in each other as a community. At a community level, everyone will know if their members act honorably with one another; they must therefore have their own community rule, which can be affected at a community level. As a result, the realistic commitment that arises in this instance is trustfulness. Of course, although Ostrom makes a good point regarding the internal rules and on ethical trust based management, there is a bit of a concern about the dark side of a particular group of people that can have ability to exercise control over the system. It has been argued that such a system can help establishing a *gang* instead of group that monopolizes the market. The commentator refers to the lobster fishery of Maine (1988) as an example.[637]

However, the most important element of the communal resources system is the principle of sustainability that has been underpinning management over a long history. Bosselmann gave another example of the traditional resources management called "*allmende* system" of the land-use system.[638] In order to reconcile private property with environmental protection as public interests, sustainability was developed as a core principle of sustainable common-resources management. Bosselmann reaffirms that "there is a wealth of sustainability wisdom in the history of all culture," and that for individuals, there is an innate

[634] At 44, 186.
[635] At [186-187].
[636] At 187.
[637] Barnes, above n 181, at 154; and J.M. Acheson *The Lobster Gangs of Maine* (University of New England Press, Hanover, 1988).
[638] Bosselmann, above n 284, at [14-15].

ability to live sustainably with nature, deep within our human spirit.[639] A philosophy of sustainability could be encapsulated in the context of peacefulness or justice. It could be a way to live harmoniously and in balance with the natural environment. Judge Weeramantry stated that "the concept of sustainability involves another type of balance,"[640] referring to the global wisdom that has been found in the past through traditional and religious wisdoms.[641] It can therefore be presumed that sustainability can be the primitive or contemporary knowledge of successful human civilization that has the ability to govern relatively between the natural environment and human development in terms of resource exploitation and conservation.

The root of the word 'sustainability' is derived from the Latin *sustinere*, consisting of *sus* meaning 'up' and *tinere* meaning 'to keep' or 'hold'.[642] This root points to the notion that sustainability refers to the continued existence of natural resources or the capacity of natural fertility that supports human society. The relativity between private property in terms of land and the ways to use said land sustainably could create an outcome of success or failure for society. Although it is the action or result of a private unit, it impacts the public as a whole. In this context, natural historians and archaeologists can tell us the reason many ancient civilizations struggled to survive under extreme tension from the natural environment or the reason some, like the Mayans or the Chaco Anasazi, experienced a downfall. Jared Diamond (2005) indicates several factors that might have caused collapse in societies, such as climate change, hostile neighbors, trade partners, environmental problems and society's response to its environmental problems.[643]

This case might have resulted from ineffective governance in maintaining the balance between (agricultural) development and the ecological capacity in the given area. Diamond makes the point that society has the ability to choose success or failure. In this context, it is about whether society determines to go for exclusive rights based on private property with less concern about environmental responsibility, or increasing the focus on sustainability over private property.

The land-use system has unavoidably reflected natural conservation, particularly in the Anglo-Saxon common legal system. Large private land covers areas of forestlands and wildlife habitats that are under occupancy by a single owner or a group. Historically, both civil and common jurisprudences have captured the concept of sustainability in resource arrangement in private and common lands. In medieval agricultural society (agrarian community), all forestlands were common lands after being "marked," then became private property. Prior to Locke, throughout the European mainland, early humanity had its own

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[639] At 12.
[640] C.G. Weeramantry "Rights, Responsibilities, and Wisdom from Global Cultural Traditions," in Prue Taylor and David Grinlinton (eds) *Property Rights and Sustainability: The Evolution of Property Rights to Meet Ecological Challenge* (Martinus Nijhoff, Leiden, 2011).
[641] At Foreword xvii.
[642] Klaus Bosselmann "Sustainability and the Courts: A Journey Yet to Begin?"(2011) *Journal of Court Innovation*, at [337-347].
[643] Jared Diamond *Collapse*: *How Societies Choose to Fail or Succeed* (Viking Books, New York, 2005).

territory. Forests were held in common, governed by groups of families and then in the form of a town council.[644] Evidence of common concept found in early German speaking countries and their legal systems is known as the *allmende* or the commons.[645]

According to M. de Laveleye (cited in Numa Denis Fustel De Coulanges); the *allmende* system was related to private property. Laveleye wrote that the Swiss legal system of non-separation of land was considered as the common property of all people and that these lands were not supposed to belong to anyone individually. However, that meant private property went side by side with the *allmende* or the commons management, so it was only a part of the land, but not all of each community. These commons were usually forests, mountain pastures or other land not particularly capable of cultivation. Laveleye stated that "private property is accordingly the dominant fact; common ownership only concerns accessories."[646] Furthermore, the *allmende* can be found in any country, and is therefore known as the community commons that is governed by the community. It is important to note that the land managed in the *allmende* system can be cultivated in common and the produce can be used in common under the council or the head of the family. Laveleye made "it clear that it is not community in land, but it is the common ownership of the family."[647] In other words, those commons have their owners, so there are no such commons in the sense that everything is free for everybody in use. Moreover, George Monbiot cited in Bosselmann (2010) suggests that the logic of common system is self-monitoring management. All members of community have a participation in monitoring each other's in over-harvesting resources.[648] Therefore, we should not get confused with communism. As can be seen, property rights remind owners of their land. Yet, the *allmende* system places less emphasis on the individual nature of property rights and more on the community nature of the right. In this said system, property rights for using the land were allocated to a community rather than an individual. Whilst the *allmende* land-use system allows local people, those of the same community (not including strangers) to have the right to use or collect resources on land (whether owned by the community or individuals), the members also have a duty to use without jeopardizing the original sources of the products (enjoy the fruit, do not cut the trees).

Bosselmann observes that there are three limitations in traditional practice of *usufruct* right (right to use) under the *allmende* system.[649] Firstly, there is the relationship between the significant ecological limitation on land and the number of members who are granted such rights, which falls under the notion of inheritance under the same kinship. Bosselmann points out that in terms of relationship it is regarded as "heritage from the past and obligation for the future."[650] Secondly, these individual land use rights need to

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[644] Numa Denis Fustel de Coulanges *The Origin of Property in Land*; translated by Margaret Ashley (Batoche Books, Kitchener 2000) at 47.
[645] At 82.
[646] At 83.
[647] At 83.
[648] Klaus Bosselmann "Property Rights and Sustainability: Can They be Reconciled?" in Grinlinton David and Prue Taylor (eds) *Property Rights and Sustainability* (Martinus Nijhoff, Leiden, 2010) at 25.
[649] At [14-15].
[650] At 14.

be exercised in a restricted sense. Under the *allmende* system or well-regulated agrarian community, ecological fertility is among the most important elements[651] simply stated, as with healthy soil, water and land these farmers will produce a good crop. Therefore, in protecting ecological health, the community must take care of all components of forestlands as a higher privilege for the whole instead of the individual.[652] The crop fields are arranged to individuals in cultivation and possession, yet the landholder holds the right to make the final decision. These commons would not be separated into private land because of mixed labor. Furthermore, he notes that under the *allmende* system, local common ownership is dissimilar to private property because the final decision still remains with those who hold collective interests. Thirdly, common lands cannot only be divided, sold, or passed on, regardless of the permission of the landholders[653] (whose members mostly will have to be relative.) For Bosselmann, the *allmende* system emphasizes the relationship between humans and nature, which is linked to "the ethics of stewardship", so the use of land with concern of ecological limitation and respect for the nature are the way toward "ecological sustainability."[654]

Finally, it is important to note that being a sustainable community could refer to the ability to transfer the principle of ecological sustainability that has maintained a balance between private and public interests in the context of natural environmental governance. Therefore, for Bosselmann community that is concerned about the notion of a clean/healthy environment for its citizens and ecological integrity of their own land would have the capacity to create a legal system that supports both notions.

3.9 Public Trust Doctrine, Human Rights, and Ecological Integrity

In the earlier period of public trust doctrine, the US federal government had claimed its federal authority on behalf of the American's public interests, particular in navigable waterways, public land-use and wildlife/game preservation throughout its various agencies. Peter H. Sand observed that with regard to the public trust doctrine associated with environmental law, it started from the Supreme Court case (Illinois Central Railroad vs. People of the State of Illinois 1892).[655] Essentially, the core of the doctrine is that the state authority holds a trust on behalf of the public and for the benefit of the public as a whole. The tradition public trust was applied to certain natural resources.[656] The doctrine originated from the Roman law as mentioned in the law of nature that some *things* cannot be privatized, so those things must be kept for public use. Goble D. Dale and Freyfogle T. Eric both have suggested that the doctrine traditionally began with the public rights of use/access to waterways for fishery and commerce in common

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[651] At 14.
[652] At 14.
[653] At 14.
[654] At 15.
[655] Peter H. Sand "Sovereignty Bounded: Public Trusteeship for Common Pool Resources" (2004) 4 *Global Environmental Politics* 1, at [47-71].
[656] Alexandra B. Klass "Modern Public Trust Principles: Recognizing Rights and Integrating Standards" (2006) *Notre Dame L. Rev*., Vol. 82:2, at [699-751].

against the private rights of the riparian landowner.[657] Since then the concept was found in several state laws (the 1970 Environmental protection Act of Michigan) and federal laws such as the 1990 Oil Pollution Act. The Pennsylvania Constitution (amended on 1971) stated that

> "The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of the people."[658]

In the late 19th century, during this time as growing concerns regarding environmental protection emerged as public interests for the American society, public trust was suitable to be applicable to the case. Environmental protection and national parks and wildlife sanctuaries became a necessity for the American public. The public trust has been developed to serve the interests of the public.[659]

In the United States of America, the 1983 Mono Lake case in California [National Audubon Society v. Superior Court][660] is known as the classic case of the American's environmental law for public trust.[661] The plaintiffs brought the case to the Court claiming that the State agency was violating the public trust doctrine by allowance of the diverted water project which caused the water level decline and had a negative impact on the Lake's ecosystems. The argument was raised regarding whether the State agency had overshot the purpose, scope and power of the original trust of public (citizens of California).[662] However, it is important to note that the water of the Mono Lake had already been used for the navigable waterway, supporting a local shrimp industry for commerce under 'traditional' public trust. Even so, there was little or no awareness of environmental protection from 1928 to 1979; it can be seen in the California State Constitution Article X, section 2 as it states that all waters of the state must be put to reasonable and beneficial use.[663]

The Court holds that the ecological and recreational values were in the scope of the public trust doctrine as can be seen in a case of *Marks v. Whitney*.[664] At this point, the doctrine was not limited to traditional purpose and scope of commerce, because it expanded to the ecological interests of public concern as a whole. Whilst the spirit of the public has changed from the traditional navigation or fishery to protecting

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[657] Dale D. Goble and Eric T. Freyfogle *Wildlife Law Cases and Materials* (Foundation Press, NY, 2002) at [397-398], 449.
[658] Mathew Thor Kirsch "Upholding the Public Trust in State Constitutions" (1997) Duck L.J. at [1169, 1170-1210].
[659] Richard J. Lazarus "Changing Conceptions of Property and Sovereignty in natural Resources Law: Questioning the Public Trust Doctrine" (1986) *Iowa L. Rev.,* Vol., 71, at [631-716]. (Georgetown Law Faculty Publications, 2010) at <http://scholarship.law.georgetown.edu/facpub/152/> .
[660] *National Audubon Society v. Superior Court* 33 Cal. 3d 419 (1983).
[661] Dave Owen "The Mono Lake Case, the Public Trust Doctrine, and the Administrative State" (2012) *University of California, Davis*, Vol., 45:1099, at [1099-1153].
[662] Johnson W. Ralph and William C. Galloway "Can the Public Trust Doctrine Prevent Extinction?" in Snape III J. William *Biodiversity and the Law* (Island Press, Washington ,1996) at [157-163].
[663] California State Water Resource Control Board, Division of Water Rights, *Draft Environmental Impact Report for the Review of the Mono Basin Water Rights of the City of Los Angeles, Appendix R. Legal History* (1993) 549/APPD-R, at R1-3; source from <www.monobasinresearch.org/images/mbeir/dappendix/app-r-text.pdf> (visited on July 12, 2014).
[664] Tamara Pearson d' Estree and Bonnie G. Colby *Braving the Currents Evaluating Environmental Conflict Resolution in the River Basins of the American West* (Kluwer Academic Publishers, Boston, 2004) at 75.

the lake's ecosystem for recreational values, the state as a trustee had a continuing responsibility under the aegis of public demand. As the Court stated:

> "[t]he public trust is more than an affirmation of state power to use public property for public purposes. It is an affirmation of the duty of the state to protect the people's common heritage of streams, lakes, marshlands, and tidelands, surrendering that right of protection only in rare cases when the abandonment of that right is consistent with the purposes of the trust."[665]

It was therefore clear that the California State had a confirmatory duty to reconcile public trust into the allocating and planning of water resources of the Mono Lake basin. The Court further stated that the public trust doctrine in 'a modern version' moved from commercial purposes to natural conservation.[666] In contrast, it was impossible to escape the conflicts of interest among the private and public spheres. The case highlighted the conflict between public trust doctrine (for environmental protection) and appropriate water rights. Whereas regulation based on the public trust doctrine for protection bio-environmentally cannot be triggered by itself, rather it depends on 'reasonable proof' that relates to the administrative law and environmental impact assessment.

From the perspective of human rights, the wellbeing of humans reflects the right to live in a healthy environment. Pollution of all kinds, resource depletion, or ecosystem decay can threaten human health, as in particular children as well as vulnerable persons become threats to human rights. At present, environmental human rights have become a responsibility of state authority. In the USA and in several countries, constitutional law recognizes environmental human rights[667]. So, rights to live in a healthy environment seek to ensure that the natural environment will not be depleted into a critical level that could in return harm human rights. Jan Laitos (*the Right of Nonuse*, 2012) seems to agree that it is suitable to apply public trust doctrine to protect "trust resources" based on environmental human rights.[668] Moreover, Laitos with his theory of non-use right of those natural (trust) resources takes a next step further. Laitos seems to agree that the nonuse right would offer support to constitute public obligations of private owners as a sort of checking and balancing the right to use of the owner by not jeopardizing or overusing such natural resources.[669] Whereas state authority can create parks or natural recreational areas for serving public needs that guarantee instrumental values, the effectiveness of the well management thereof relies on the intrinsic value of such environment. Public trust doctrine plus "environmental human rights"[670] gave birth for legal recognition in the American legal community as seen in Mary C. Wood (2014) suggesting the idea of "the People's Natural Trust".[671]

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[665] Goble and Freyfogle *Wildlife Law Cases and Materials* above n 657, at [454-455].
[666] At 455.
[667] Jan G. Laitos *The Right of Nonuse* (Oxford University Press, Oxford, 2012) at [115-116].
[668] At 116.
[669] At 116.
[670] Leib, above n 211, at [136-148].
[671] Mary Christina Wood *Nature's Trust: Environmental Law for a New Ecological Age* (Cambridge University Press, NY, 2014) at [324-326].

Of course, the core of natural trust that must be protected is the "ecological integrity"[672](EI). The scholars point out that the EI approach has been mentioned among environmentalists since the late 19th century as ethical and scientific rationality for supporting the public interests relevant to clean water protection. In terms of ecosystems, the approach focuses on the quality thereof, as much as the quantity.[673] EI requires more specific protection to State authority. Therefore, if EI is well protected, the healthy environment and the wellbeing of the public as a whole can be guaranteed. The fundamental conception of EI is relative to ecological holism which originates from Aldo Leopold's the Land Ethics (1949). In the United States, EI was also recognized by law and creating federal laws around this principle has its origin in the 1972 US Clean Water Act[674], which has been applied to international agreements between the United States and Canada in the Great Lakes Water Quality Agreement, 1972 and its amendments in 1978, 1983, 1987 and 2012.[675] The inherent natural value of the Great Lakes Basin ecosystem has been recognized internationally. Both American and Canadian parties agreed to "restore and maintain the chemical, physical, and biological integrity of the Lakes" with maximum efforts[676]. The same as in the USA, the Canadian National Parks Act, 2000 also mentions ecological integrity as a core theme for natural preservation.[677] Section 2(1) states that

> "'ecological integrity' means, with respect to a park, a condition that is determined to be characteristic of its natural region and likely to persist, including a-biotic components and the composition and abundance of native species and biological communities, rates of change and supporting process."

And also, Section 8 (2) states that

> "Maintenance or restoration of ecological integrity, through the protection of natural resources and natural processes, shall be the first priority of the Minister when considering all aspects of the management of parks. "Under both Sections, protecting ecological integrity of parks aims to protect nature for its own sake, independent from human interests.[678] Thus, plans and management that could potentially harm natural integrity must be prohibited.[679]

Overall, it can be noticed that the conflicts of private and public interests in use and exploitation over the Earth's biodiversity have remained unchangeably central to the debate. Whether domestic law or international law, societies attempt to apply appropriate property doctrine to allocate the Earth's biodiversity for all who require them for their survival. Private, public, collective and common goods are

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[672] Westra *An Environmental Proposal for Ethics,* above 104, at [69-70].

[673] James Karr "Ecological Integrity: An Essential Ingredient for Humans' Long Term Success" in Laura Westra, Klaus Bosselmann, and Colin Soskolne (eds) *Globalisation and Ecological Integrity in Science and International Law* (Cambridge Scholars Publishing, Newcastle, 2011) at [8-25].

[674] Richard Oliver Brooks, Ross Jones and Ross A. Virginia *Law and Ecology*: the Rise of the Ecosystem Regime (Ashgate, Burlington, 2002).

[675] The Great Lakes Water Quality Agreement of 1972 between United States and Canada, amanded 1978,1983,1987, 2012 sighed on 7 September 2012, entered into force on Feb. 12, 2013.

[676] US EPA "the Great Lakes Water Quality Agreement of 2012" (25 May 2013) <www.epa.gov/glnpo/glwqa/20120907-Canada-USA_GLWQA_FINAL.pdf>.

[677] Stephen Woodley "Ecological Integrity and Canada's National Park" (2010) 27 *the George Wright Forum* 2, at [151-160].

[678] Shaun Fluker "Ecological Integrity in Canada's National Parks: the False Promise of Law" (2010) 29 W.R.L.S.I. at [89-123].

[679] Shaun Fluker "Environmental Norms in the Courtroom: The Case of Ecological Integrity in Canada's Natural Parks" in Laura Westra, Prue Taylor, and Agnes Michelot *Confronting Ecological and Economic Collapse* (Routledge, Abingdon, 2013) at [24-25].

introduced to manage fair and just distribution. The accepted idea of labor and first-come-first-serve ensures who should be the fastest and strongest person to take the best proportion without any concern to a means. This sort of anthropocentric paradigm cannot correct the mistakes that human civilization has imposed upon to Earth. From an eco-centric perspective, the principle of sustainability and ecological integrity have given arise to domestic environmental law in several countries. Environmental law plays a role as a middle ground dealing with long controversial conflicts between private and public law in the context of natural resource arrangements. With regard to modern environmental law and natural resources law it must stand on behalf of the earth based on an eco-centric paradigm and as such should not be counted as pro-public interests, or anti-private ones.[680]

3.10 Approach of State Trusteeship and Fiduciary Obligations

"State trusteeship" is a way of transformation between state sovereignty based private doctrine and common trust based common property doctrine (sustainability).[681] Instead of focusing on absolute sovereign rights to exploit, trusteeship points to responsibility to the earth commons.[682] The scholars argue that the earth biodiversity commons should be governed in terms of common property governance.[683]

From the planetary trust's E. B. Weiss (1984)[684] to several model of global environmental governance (2015), trust based approach has gained more significance. Peter H. Sand argued that limits on territorial sovereignty have been justified by the doctrine of community interest(s).[685] Because biodiversity conservation is recognized as common concern of humanity. Nation states cannot deny their obligations that based on the common interest of humanity as the beneficiary, of action taken on its behalf by states performing as fiduciaries and trustees. Similar to the public trust doctrine as discussed, the functions of state-sovereignty for the earth commons can be seen as “trusteeship,” by holding biodiversity in trust to the international community.[686] Here Sand refers to Judge Christopher G. Weeramantry "a principle of trusteeship for Earth resources."[687] Sand has also suggested that "the sovereign rights of states over certain environmental resources are not proprietary, but fiduciary obligations."[688] In this way, nation/states would have remained rights to use some parts of the earth's biodiversity as biological resources for its own development, even so, rights of use and a means of exploitation must oblige under the fiduciary obligations. By taking care and holding trust for international community as a whole, the roles of state

[680] Laitos*The Right of Nonuse*, above n 667 at [63-71].
[681] Bosselmann, above 127, at [125-126].
[682] Bosselmann, above 284, at [145-149], [165-171].
[683] Weston and Bollier, above n 160, at 242, [248-252]; and Barry Brunette “State, Global Environmental Governance and the Earth Charter” in Klaus Bosselmann and Ronald J. Engel (eds) *The Earth Charter: A Framework for Global Governance* (KIT, Amsterdam, 2010) at [129-130].
[684] E.B. Weiss "the Planetary Trust: Conservation and Intergenerational Equity" (1984) 11 *Ecology L.Q.* 495-582.
[685] Peter H. Sand "Sovereignty Bounded: Public Trusteeship for Common Pool Resources", above 655, at [47-71].
[686] At 52.
[687] At 53.
[688] At [47-48].

sovereignty would be transformed into state trusteeship.[689] Nation/states as the trustee hold the earth's biodiversity (trust resources) in trust for their own citizens, and future generations.[690]

However under the old anthropocentric statehood system, it is argued that state sovereignty is still important, so private based system is more accepted. Under the limit of Westphalia based on private notion, Westra also argues that territoriality is still treated as "the *de facto* as much as *de jure* in a sense of property doctrine", it is an inseparable part of state sovereignty.[691] That means without terrain, sovereign rights cannot exercise.[692] So, states become the subject as well as object of its own territorial sovereignty. According to the trust-based approach, while independent nations/states still have sovereign rights to use biotic resources for sustainable development as a trustee, they must agree that biodiversity equates to the common goods which belong to the earth community.

The scholar suggests that both biodiversity and its complexity are not territorial, but global.[693] So, states could not claim territorial sovereignty as state owner in absolute power over the earth's biodiversity. At this point, such a property claim cannot fully qualify under "the rules of capture."[694] As discussed in the previous Chapter, although the scholar points to study of international law of property,[695] it may be argued that international property law has not yet demonstrated any abilities to govern the ecosystem services through the biosphere in the context of protecting its quality of such flows. Thus, private property right can only be conserved via physical biodiversity (raw materials) that benefits state's owner, yet it is unable to protect functional biodiversity that advocates the biosphere because its elements do not derive from a single source. If international law allows all states to claim private property right over fundamental sources of biogeochemical cycles that flow over its lands this signifies the state assumes "rules of capture" to claim such services physically, whereas, in fact there is no absolutely physical matter of the biosphere. The biotic flows do not share the property right's characteristics. Whereas if gases such as oxygen and carbon dioxide are captured in a form of containerization, it can be treated as private goods yet, if it is not, it is out of private characteristics. For example, whilst Earth captures all biogeochemical cycles within its atmospheric system, by nature, there are no water molecules leaking out of the earth's atmosphere. Earth captures all biogeochemical cycles and flows of ecosystem services within its atmospheres, so it makes more sense to say that those elements belong to Earth, rather than state's boundaries. No artificial states can claim such ability. At this point, the state cannot claim absolute ownership over the flows by claiming territorial sovereignty, so the earth's biodiversity commons could not be treated as state private property just because state exists within the biosphere.

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689 Kiss and Shelton *International Environmental Law* , above 486, at 20.
690 Bosselmann, above n 284 at [146-147].
691 Westra *Environmental Justices & The Rights of Indigenous People*, above 209, at [24-25].
692 Ian Brownlie *Principles of Public International Law* , above 376, at [178-80].
693 Bosselmann, above n 284 at 166.
694 Laitos, above n 667 at [108-109].
695 John G. Sprinkling *the International Law of Property* (Oxford University Press, Oxford, 2014) at [116-122].

State trusteeship does not deny the property notion of territorial sovereignty, but emphasizes the role of public or commons trust responsibility.[696] Rather than fragmented management, the earth commons is held in trust by the state as a trustee (instead of an owner).[697] The trustee state shall bear legal rights as well as fiduciary obligations under the concept of global biodiversity governance in relation to the common-pool system. In contrast to the rights to exploit or even participate in the alteration of biodiversity systems, states shall have obligations of trust to maintain the well quality of flows of bio-complexity because the primary biotic sources habitat are within state's territory.[698] Each trustee state shares the benefits of the commons as much as the obligations.

Furthermore, Bosselmann states that the concept of state trusteeship is a way of how to reconcile the ecological context (the earth's ecological integrity) to the state's territorial integrity.[699] In terms of the transformative approach, Bosselmann suggests that even though state sovereignty is still important to international law, transforming the role of the state ownership to trusteeship is also an important priority to deal with the ecological crisis of the 21st century.[700] Absolute sovereign rights to exploit over biodiversity must be shifted from ownership to trusteeship, so nation states become trustees of the earth domain. The state still retains the right to use as long as such exercises do not cause impact to the earth's ecosystems. The role of trusteeship will slow down overexploitation and connects to environmental reasons (ecological sustainability) instead of socio-economic reasons.[701] For eco-centric views, it has been suggested that states as part of the earth's community do not rest on their trust to international community solely, rather to Earth and all life on it. The legitimacy of trusteeship originates from the reality that any claimed lands originate within the entire boundary of biosphere, so this heritage right exists from the law of physics.[702] Bosselmann states that the "state cannot claim sovereignty or ownership over the environment. The environment is a privilege, not a right, and any entitlements are limited to the sustainable use of the environment's resources."[703] Moreover, justification of state trusteeship imprints state's obligation to protect environmental human rights.[704] It can be seen in the Gabcikovo-Nagymaros case in which Weeramantry seemed to agree with the idea that "environmental rights are human rights".[705] Both environmental protection and human rights share common objectives.[706] Sustaining the biosphere is intertwined with human concerns over cultural, legal, social, ethical, and religious

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[696] Bosselmann, above n 284 at [138-139].
[697] At 167.
[698] Sand, above 655, at [47-71].
[699] At 146.
[700] At [169-171]
[701] Klaus Bosselmann "Environmental Governance: A New Approach to Territorial Sovereignty" in Robert J. Goldstein (ed) *Environmental Ethics and Law* (Ashgate, Aldershot, 2004) at [293-314].
[702] At 312.
[703] At 312.
[704] Bosselmann, above 284, at [127-128].
[705] Laura Westra "Environmental Rights and Human Rights: The Final Enclosure Movement" , above 203, at [107-119].
[706] E. B. Weiss *Environmental Change and International Law* (United Nations University Press, Tokyo, 1992) at 13.

associations. It is necessary to note that anthropocentric climate change has impacted human health.[707] So, the roles of state, as trustee, to protect the integrity of the biosphere, as fundamental rights of humans constitute the global obligation of state trusteeship.

Legal legitimacy of state trusteeship for protecting the commons is involved in the UNCLOS's common heritage of (*hu*) mankind ("CHM"), the CBD's common concern for humankind ("CCH"), and the UNFCC's common but differentiated responsibilities ("CBDR").[708] Speaking of these legal rationalities, they confer the relationship of trusteeship and fiduciary responsibility to the earth commons.[709] Article 137 (2) of the UNCLOS points out that all rights in such an Area are vested in (*hu)* mankind as a whole. [710] Similar to the migratory wildlife of the CMS, the Preamble reveals the spirit of Convention mandating that "wild animals...are an irreplaceable part of the Earth's natural system which must be conserved for the good of mankind...."[711]

Under the paradigm of trust, the International community has considered biodiversity conservation as a case in which the well-regulated governance of biodiversity is entrusted to all State Parties in its jurisdiction. Under this high expectation, States hold the trust of the international community in protection/conservation. The global governing of biodiversity is considered as a "common concern for humankind" whereby States in possession of a primary biotic source agree to sign and ratify the Biodiversity Convention to treat/use some parts of the earth's biodiversity unharmed.[712] Therefore, utilizing biotic resources with respect to functions of biogeochemical cycles must be a consideration. Sovereignty right to use biotic resources is limited for the benefits of others. The State is bound by the right to use resources in a spirit of sustainability. 'Sustainable use' means "the use of components of biological diversity in a way and at a rate that does not lead to the long term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations."[713]

In a deeper sense, because intrinsic values of biodiversity are so important to all life, the scholar suggests the "common heritage of life" that deliberates the fundamental ethics of care and respect for Nature.[714] At this level, the core of trusteeship is ecological sustainability and its integrity is a core function of biodiversity conservation.[715] Despite the fact that the State has rights to use its own biotic resources, such

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[707] Jonathan A. Patz, Diarmid Campbell-Lendrum, Tracey Holloway, and Jonathan A. Foley "Impact of Regional Climate Change on Human Health" (2005) *Nature* 438, at 310-317.
[708] P.W. Birnie and A.E. Boyle *International Law and the Environment* (2 nd ed, Oxford University Press, Oxford, 2002) at [144-145].
[709] Peter H. Sand "Public Trusteeship for the Oceans" in Tafsir Malick Ndiaye,Rüdiger Wolfrum (eds) *Law of the Sea, Environmental Law and Settlement of Disputes* (Martinus Nijhoff Publishers, Leiden,2007) at [536-537].
[710] UNCLOS, Article 137(2).
[711] CMS, at the Preamble.
[712] Bosselmann *Earth Governance*, above n 294 at 152.
[713] CBD, Article 2.
[714] Prue Taylor *An Ecological Approach to International Law* (Routedge, London, NY, 1998) at 298.
[715] Bosselmann, above n 294, at 146.

rights are limited with the fiduciary relationship that requires the State to use resources in an ecologically sustainable manner on the basis of the commons trust.[716]

3.11 *Jus cogens* and *Erga omnes* Obligations

However, the practical problem is these common doctrines alone are lacking a specific obligation for enforcement as discussed in the previous Chapter. The commentator points out that although the state that has sovereign rights as the owner to do whatever it want to, does not intend to ruin its own territories. Even Locke's property theory pointed to husbandry ethics over property, so the stewardship approach has been addressed to replace the absolute sovereignty.[717] Nevertheless, from an eco-centric perspective, stewardship is not enough to call for human responsibility to the earth's biodiversity because it stems from anthropocentric views and individual rights. State trusteeship would be an alternative in general, as the notion of trust obligation arises in several civilized nations.[718] Based on equitable doctrine, and beneficiaries, a fiduciary or trust duties is intended to offset the radical impacts of strict enforcement of the letter of law and absolute legal rights.[719]

When trusteeship is held by states, public functions to prevent harms to the biodiversity commons are automatically activated in balance with private functions to exploit. At this point, it is a duty of the trustee state to apply the precautionary principle when exercising its rights to use, because the core principle is to protect the common concerns of international community.[720] Wherever the earth biodiversity commons locates within or across any state jurisdictions, the trustees must take into account that they cannot exercise its sovereignty in conflict with a duty of care or against the community interests.

Under the private property governance, state governments represent themselves as the highest authority for biodiversity governance. However, the justification of such rights places on its public functions to act for its own people. Failure to prevent global environmental harms by overuse or contributing biodiversity collapses must be a serious issue. In the CBD's text, biodiversity is defined as similar as biological resources.[721] By emphasizing biodiversity as commodity, rather than a primary source of life the treaty justifies unchecked private exploitation of the state. Without a specific obligation, there are no warrantees State will be ecological friendly or exploit the biodiversity. As discussed above, the extreme interpretation of exclusive sovereign right could lead States to overuse their resources or even to destroy them.[722] This

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[716] Weston and Bollier, above n 160, at [242-245].
[717] Barnes, above n 181 at [155-156].
[718] Bosselmann, above n 294, at [146-147].
[719] Hanbury G. Harold and Martin E. Jill *Hanbury and Martin Modern Equity* (14th ed,Sweet& Maxwell, London, 1993) at [291-330].
[720] Bjorn M. Funk "the Precautionary Principle" in Klaus Bosselmann and Ronald J. Engel (eds) *The Earth Charter: A Framework for Global Governance* (KIT Publishers, Amsterdam, 2010) at [191-208].
[721] CBD, Article 1.
[722] Jóhannsdóttir, above n 175, at [203-207]; and Jóhannsdóttir, above n 480, at [81-84, 102].

concern links to the five main threats to biodiversity, as mentioned above[723] seeking stronger responsibility of State to protect biodiversity. That is simply because the cost of the ecological destruction has a negative impact to human health according to its consequences of the global environmental harms.[724] It is widely acknowledged among scientific communities that climate change/global warming over the past decades are contributed to by human activities.[725] The negative impacts have therefore rebounded in a case of global environmental harms. The scientific ability to predict can counsel the state authority to make a decision to prevent potential harms. So, governments who have failed or ignored to take precautionary actions may face accountability to the victims,[726] because governments have positioned themselves as holding their absolute authority to allow biodiversity depletion. This can be seen in a case of clear-cutting mangrove forest and Tsunami.

Another significant issue focuses on the unsustainable activities of nation/states involved in the five main threats of biodiversity losses may cause a negative impact to rights to food,[727] right of access to water,[728] and right to a healthy environment.[729] For right to food, the increasing of the world population reflects on the demand for food security.[730] While the market-based incentives can increase the raw materials to the world food market, they has caused the rural people converting pristine forests into monoculture activities.[731] Such activities create an imbalance and unfair trade in the food market.[732] While the biological resources are affected by deforestation, and global environmental damages, controlling the seed market or food products via patent regimes can advantage a few of agricultural companies to control the food price. Its consequence can cause food insecurity and insufficient import capacity that can threaten the right to food.[733] Similar to the right of food, commodification of the water commons means (whether in ground water or surface water) limitation of access to water; this can violate the right to

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[723] CBD, *Global Biodiversity Outlook 3* (Montreal, CBD, 2010) at 9, 55.
[724] Michael Mason *The New Accountability:* Environmental Responsibility Across Borders (Earthscan, London, 2005) at 8.: Jeanne X. Kasperson and Roger E. Kaspenson "Border Crossings" in Kasperson J.X. and Kaspenson R.E (eds.) in *The Social Contours of Risk: Volume II, Risk Analysis, Corporation & the Globalization of Risk* (Earthscan, London, 2005) at [217-248].
[725] NASA, Global Climate Change "Scientific Consensus: Earth's Climate is Warming" (visited on 14 Oct 2015) <http://climate.nasa.gov/scientific-consensus>.
[726] Weston and Bollier, above 160, at [84-85].
[727] The UDHR, Article 25; and The ICESCR, Article 11.
[728] Leib, above n 211, at [144-145].
[729] Maud Huynen and Pim Martens "Linkages among Globalization, Human Rights and Health" in Colin L. Soskolne in *Sustaining Life on Earth* (Rowman& Littlefield Publishers, Lanham, 2008) at [70-71]; and Leib, above n 211 at [143-155].
[730] David Pimentel and Marcia Pimentel "The Future: World Population and Food Security" in Colin L. Soskolne *Sustaining Life on Earth* (Rowman& Littlefield Publishers, Lanham, 2008) at [285-295].
[731] Muhammad Ibrahim, Roberto Porro, and Rogerio Martines Mauricio "Deforestation and Livestock Expansion in the Brazilian Legal Amazon and Costa Rica: Drives, Environmental Degradation, and Policies for Sustainable Land Management" in Pierre Gerber, Harold A. Mooney, and others (ed) *Livestock in A Changing Landscape: Volume 2: Experiences and Regional Perspectives* (Island Press, Washington, 2010) at [74-82].
[732] Maud Huynen and Pim Martens "Linkages among Globalization, Human Rights and Health" in Colin L. Soskolne in *Sustaining Life on Earth* (Rowman& Littlefield Publishers, Lanham, 2008) at 74.
[733] At 74.

access to water. It is believed that the free-market based on privatization will be able to advance the quality of products and services because of market competition and efficiency. However, today's globalizing market cooperation can result in market dominance on prices, inequalities.[734] There is a growing concern that right to access to safe drinking water and sanitation should be treated as a matter of human rights.[735]

The right to live in a healthy environment is clearly upheld in Article 12 of the ICESCR, and Article 17 of the Universal Declaration on Bioethics and Human Rights, 2005.[736] As mentioned, biodiversity loss and human health is linked. Depletion of biodiversity and ecosystem services to control the insect vectors can cause spread of infection diseases to vulnerable persons. The outbreak of serious diseases shows the potential of new threats to humanity. Since biodiversity decline is connected to human health, it reflects a pivotal issue of environmental human rights. A clean, healthy, biologically diverse environment is a part of human rights.[737] B. Weston and D. Bollier (2013) make three strong reasons why human rights are linked to biodiversity loss. Firstly, there has been a tendency that environmental human rights can gain legal legitimacy at international law-making and potential enforcement.[738] Secondly, such human rights are addressed in domestic constitution in many countries. Thirdly, human rights imply a public command for human dignity that can make a demand on state sovereignty and challenge the private market elites.[739]

Examining the relationship between biodiversity loss and decline in human health and unsustainable activities is pointed out in Johan Galtung's Structural Violence (1969).[740] Galtung suggested that social structure and institution (here State/Market domination) might cause harm to people by depriving them from meeting the basic requirements. Inequality to access to live in a clear and healthy environment and limitation of rights to choose their own safety foods should be considered at this point. In a case of biodiversity and ecosystem services, because those basic needs are treated as commodity and many of them are being decreased and stocked by a few hands, biological resources are not available to those who cannot afford to pay for them. Thus, a dialogue of Galtung points to violence to humanity (particularly vulnerable groups) that causes via state's ignorance to prevent biodiversity destruction.

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[734] At 75.

[735] *Human Rights and Access to Water,* UNHRC, UN Doc A/HRC/2/L.3/Rev.3 (2006); and Hajjar Leib, above n 728, at 145.

[736] UNESCO, the Universal Declaration on Bioethics and Human Rights, Article 17, 2005: Due regard is to be given to the interconnection between human beings and other forms of life, to the importance of appropriate access and utilization of biological and genetic resources, to respect for traditional knowledge and to the role of human beings in the protection of the environment, the biosphere and biodiversity.

[737] Weston and Bollier, above n 160, at [28-29].

[738] At 28

[739] At 29.

[740] Johan Galtung "Violence, Peace, and Peace Research" (1969) 6 *Journal of Peace Research* 3, 167-191, at 171.

Like Galtung, both Westra and Higgins use the term "eco-violence"[741] and "ecocide"[742] to challenge the consequences of state's negligence or non-performed precautionary action as to a crime against humanity in the context of *jus cogens*.[743] Jus cogens may be activated at such points. Beyond the protection of individual state interests and treaty system, jus cogens are mandatory.[744] This means states cannot create treaty in against the supreme norms. According to the 2006 ILC Report, it states that "international law as a legal system."[745] So, legal regimes (self-contained regime) related to biodiversity protection represent parts of the system of international law. As a legal system, such norms and principles have meaningful relationships between them. Thus, they can be treated as having higher and lower hierarchical levels.[746] Their expression may involve greater or lesser generalization and specificity and their weight may date back to earlier or later moments in time.[747] Based on this Report, it can be assumed that the norms adopted to protect the global commons for the security of humanity (such as CMH, CCH, and CBDR) should be treated as virtual norms, rather than treated on a particular norm as absolute concerning the individual rights of states.

Obligations *erga omnes* give rise to duties binding on every nation state within the global community.[748] For P. Higgins, the state is responsible to the natural environment for its own people as well as the international community. Ecological crises impacting humanity as a whole should be counted as *jus cogens*.[749] Absolute sovereignty does not take precedence over other common norms, and may therefore be less important than human rights. If human health depends on citizens having a good environment such as clear air and clean water, it must be a duty of states to provide these qualities of life to their own citizens.

In sum, it should be concluded that a social structure of violence or whatever causes via State/Market domination on foods or negligent action to protect the earth commons leads to ecological violence that implies an *erga omnes* obligation. If the state has already realized the harmful consequence of its actions, yet ignores to take precautionary principle or responsibility to prevent these actions, thereby causing significant damage to the natural capacity, this should be treated as culpable negligence, as it is the only way that *erga omnes* can be triggered.

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[741] Laura Westra "Ethics of Integrity and the Law in Global Governance" (2003) 27 *The Environs Envtl, L. & Pol'y J* 127-142, at 137.
[742] Higgins *Eradicating Ecocide*, above 207, at [68-70].
[743] Westra , above 209, at [24-25], 107, [313-315].
[744] Bosselmann *Earth Governance: Trusteeship of the Global Commons,* above n 294, at 167.
[745] ILC *Fragmentation of International Law: Difficulties Arising from the Diversification and Expansion of International law* , above n 205, at [111-119].
[746] ILC *Fragmentation of International Law,* above 206, at [40, 47-48].
[747] Higgins, above n 207, at [65-67].
[748] Kiss and Shelton, above n 486, at [16-17].
[749] Higgins, above n 207, at [68-70].

3.12 Conclusion

In order to avoid the tragedy of mismanagement, the earth's biodiversity commons ought to be governed based on the concept of the common-property regime based on state trusteeship. State sovereignty as the owner ought to be redefined as state-trustee, holding trust of the community to protect and preserve the ecological integrity of the earth's biodiversity commons within its own boundaries. Hence, it does not lose its rights to utilize territorial biodiversity. Yet such rights will be limited based on ecological limitation and resilience. Exclusive rights to exploit the territorial biodiversity necessitate compliance via trusteeship and fiduciary responsibility to ensure the core principle of ecological sustainability will be safe from negotiated rulemaking. The merit of this trust-based governance is that the trustee states share the ecological responsibility for the global commons as well as the international community.

CHAPTER 4: FRAGMENTATION UNDER NEOLIBERAL BIODIVERSITY CONSERVATION IN INTERNATIONAL BIODIVERSITY REGIMES

4.1 Introduction

Over the past decades, outcome of regime system reveals its own problem. Many stand-alone regimes cause fragmentation[750] and weakness[751], so lacking of agreed goals.[752] Biodiversity and environmental treaties remain *ad hoc* and piecemeal[753]. Whereas those conventions are signed and ratified, none of them treats the earth's biodiversity protection as an integrated whole.[754] Critiques have been made that result in the absence of cooperation and coordination among international organizations, lack of implementation, compliance, enforcement and effectiveness, unity, global participation, and inefficient use of resources.[755]

This Chapter focuses on the existing international regimes related biodiversity. It investigates how the impact of neoliberal biodiversity has been influential in the operational system. The existing regime system is appreciated as nation/state alone is the main actor. Under this construction, rules and operational procedures are set by a group of state parties (known as Conference of Parties). However, although regime effectiveness requires cooperation, it has to ensure such plan and action aiming for biodiversity corridors between nation and region. Cooperation can be viewed as conspiracy, if the main purpose does not serve the common interests of the global community rather than the specific purpose of the particular group.

The argument is made that a joint group among the seven biodiversity-related conventions profit the Biotech-Market companies and the government to increase more power to an enclosure of the earth biodiversity commons. Here it is assumed that to avoid the commodification of biodiversity, this Chapter suggests the wisdom of rethinking about the original concept of the global governance for human and environment. Unlike the regime system based on state authority, the global governance for sustainability is grounded on the concept of the Earth Charter, which was once rejected in the 1992 Rio Conference by states. This is why the three of the Rio Conventions have lost their fundamental principles. Such fault leads nation/states to seek cooperation of the Market enclosure.

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[750] Sean D. Murphy "Deconstructing Fragmentation: Koskenniemi's 2006 ILC Project" (2013) TICLJ, *Forthcomiong*; GWU Law School Public Law Research Paper No. 2013-109, at [1-18].
[751] Bradnee W. Chambers *Interlinkages and the Effectiveness of Multilateral Environmental Agreement* (United Nations University Press, Tokyo, 2008).
[752] Kim E. Rakhyum and Klaus Bosselmann "International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements" (2013) 2 *Transnational Environmental Law* 2, at [285-309].
[753] Patricia W. Birnie, Alan E. Boyle, Catherine Redgwell *International Law and the Environment* (Oxford University Press, Oxford, 2009), at [2-3].
[754] Oguamanam "Biological Diversity", above 53, at 209.
[755] Najam Adil, Papa Mihaela, Taiyab Nadaa *Global Environmental Governance: A Reform Agenda* (IISD, eBooks, 2006) at [14-17], [29-62].

4.2 The Biodiversity Neoliberalism

In the past couple of years, the process of sustainable economic growth has faced a difficult time in the global economic crisis.[756] Many scholars viewed this event as "Tragedy of Market."[757] Consequently, the term "green economy" seems to appear coincidently in the Rio+20 Conference.[758] With respect to biotechnological businesses, financing biological energy that relates to territorial biodiversity, it may raise hope that the remnants of the natural evolution would rescue the world economy. Conserving biodiversity for sustainable development has been continually promoted as contributing to poverty elimination. It should be noted that since 2010 the CBD has increased its role in terms of its economic intensity related to conserving and utilizing genetic biodiversity as raw materials in order to supply the world food-drug market. Referred to as "the new and innovative financial mechanism," the CBD has propagated the strategy of resource recruitment “biodiversity financing mechanism" (BFMs).[759]

The United Nations dialogue on financing for biodiversity is clear regarding the ongoing commodification of the earth's biodiversity for sustainable economic development. This pattern is to create the cooperation that pulls all treaties related to biodiversity together in order to form a strong alliance of political negotiated makers at the international level. Under this construction, the CBD’s biodiversity conservation is prone to integrate with the concept of neoliberalism, capitalism, and free-markets. Several terms are used to highlight this unusual type of biodiversity conservation such as "neoliberal nature", "neoliberal environments" referring to "the politics of transforming and governing nature under neoliberalism".[760] The closer connection appears in the term "neoliberal conservation", focusing on the combination of political ideology and techniques in terms of “selling nature to save it” in order to conserve biodiversity.[761] As those scholars have pointed out, economic incentives will increase biotic values in a way that the market expansion could foster the poor to conserve its own resources. Bram Büscher asserts “neoliberal conservation shifts the focus from how nature is used in and through the expansion of capitalism, to how nature is conserved in and through the expansion of capitalism.”[762] In other words, the neoliberal conservation links economic rationales to reduction of poverty that deems to impact biodiversity depletion, particular in the territorial biodiversity of the poor South nation-states. However, it needs to be aware that such a means may lead to the monopolization of genetic diversity. The commodification of the genetic diversity may allow a few who has controlled the know-how of biotechnologies and capital to manage a choice of people to choose their own way of living.

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[756] Kevin Rudd "The Global Financial Crisis" (2009) The Monthly Australian, Society and Culture <www.tucp.org.ph/news/wp-content/uploads/2009/07/rudd_feb09_monthly.pdf>.
[757] Bosselmann, above 294, at 157; and Weston and Bollier, above 160, at [6-7].
[758] *The Future We Want* UN A/CONF.216/L.1 (2012).
[759] Claudia Ituarte-Lima, Maria Schultz, Thomas Hahn, and others *Biodiversity Financing and Safeguards: Lessons Learned and Proposed Guidelines* UNEP/CBD/COP/12/INF/27 (2014) at [4-5].
[760] Bakker "The Limits of 'neoliberal natures': Debating green neoliberalism" (2010), above 153, at [715-176].
[761] Büscher, Sullivan, Neves, and others "Towards a Synthesized Critique of Neoliberal Biodiversity Conservation", above 156, at [4-5].
[762] At 4.

4.3 Fragmented Earth and International Environmental Law

From the global perspective, international environmental law and the UN's organizations have endeavored to find a way for humanity to live harmoniously and harmlessly with the earth's ecosystem, appearing in the report of *Harmony with Nature* (2010). Not surprisingly, a misunderstanding of global environmental protection that could be harmful to socio-economic development has remained unchangeable. Freedom in use of its own property is represented in terms of state sovereignty and in the regime system. Due to the fact that so many bio-environment treaties and individual regimes exist, the problems of conflicts, institutional problems and poor enforcement in terms of quality have occurred. As a consequence, regimes that are bio-environmentally focused become weak and are easily dominated by other competitive regimes such as trade and investment regimes that share the same approach to biodiversity.

In the early 1990s, a certain lack of effectiveness and unenforceability in international environmental law was visible.[763] Edith Brown Weiss (1993, 1995) referred to the causes of failures as a result of congestion, separation, overlapping provisions, and inconsistency among other environmental treaties.[764] Scholars have challenged the effectiveness of the UN global environment governance (GEG) on several points.[765] The phenomenon of 'too-many-treaties' overcrowding has become a serious problem for the international environmental legal system.[766] The instances have been made that proliferation of MEAs and separating institutions were due to the lack of cooperation and coordination among international organizations, implementation, compliance, enforcement and effectiveness, unity, global participation, inefficient use of biological resources.[767] The most important one is due to the lack of an agreed upon goal resulting in losing sight of the long-term core.[768]

At this point, the fragmented legal governance of the global biodiversity protection refers to the separation of international agreements as treaty-regimes such as climate change, biodiversity, and trade on endangered wildlife, wetland, migratory species, and so forth.[769] The commentator classifies the fragmentation in several categories as the following: "Substantive and institutional fragmentation,"

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[763] Peter H. Sand *The Effectiveness of International Environmental Agreements* (Cambridge, Grotius, 1992); and Martti Koskenniemi "Breach of Treaty or Non-compliance? Reflections on the Enforcement of the Montreal Protocol" (1992) 3 *Yearbook of International Environmental Law*, 1, at [123-162].
[764] E.B. Weiss "International Environmental Law: Contemporary Issues and the Emergence of a New World Order" (1993) 81 *Georgetown Law Journal*, 675, at [697-702]; and E.B. Weiss "New Direction in International Environmental Law" in Donna Craig, Nicolas Robinson, and Koh Kheng-Lian *Capacity Building for Environmental Law in the Asian and Pacific Region* (Asian Development Bank, 2002) at [10-11].
[765] Adil, Mihaela, and Nadaa *Global Environmental Governance: A Reform Agenda* above n 562 at [29-62].
[766] Donald K. Anton " 'Treaty congestion' in contemporary international environmental law" in Shawkat Alam, Md Jahid Hossain Bhuiyan, Tareq M.R. Chowdhury, and Erika J. Techera *Roultedge Handbook of International Environmental Law* (Roultedge, 2013) at [651-665].
[767] At [652-653].
[768] E. Rakhyum and Bosselmann "International Environmental Law in the Anthropocene: Towards a Purposive System of Multilateral Environmental Agreements", above 752, at [285-309].
[769] Asselt Van Harro "Managing the Fragmentation of International Environmental Law: Forests at the Intersection of the Climate and Biodiversity Regimes" (2012) *44 NYU JILP* 44, at [1205-1278].

"geographical boundaries," "fragmented interpretation," "primary and secondary norms" and finally "fragmentation of political nation states."[770]

4.4 International Law as a Legal System

After almost a decade of a study, in 2006, International Law Commission (ILC) at its Fifty-eighth session concluded that "international law is as a legal system, so its rules and principles (its norms) act in relation to and should be interpreted against the background of other rules and principles."[771] The ILC further pointed out that because it is a legal system, those norms are not collected randomly rather they are relatively linked on purpose. Norms may exist "at higher and lower hierarchical levels."[772] Moreover in order to resolve common issues or specific problems it encompasses many rules, norms and principles of international law that were created from the past and expressed to the present. All of them emphasize a different purpose. Hence, it is necessary for the application of those norms, rules, and principles to take into account a situation. The ILC further suggests the "legal techniques" (*lex posterior or lex specilais*) whilst facing interpretation and conflict.[773] The scholars have pointed out that if the ILC was a more systematic approach that meant there were no conflicts of norms, whereas fragmentation occurred because of the conflict of law (too many treaties).[774] Although the debate of conflict of law[775] is not new in terms of a domestic legal system, it seems to be a new discussion in international environmental law as discussed on the infringing national boundary. At this point, the scholars suggest that the study of International Relations and International Law needs to work systematically. While the role of international relations looks for the effectiveness associated with the legal regime's interaction, international lawyers are demanding to seek hierarchical norms (the highest norms).[776]

4.5 Overview of the Regime System

The regime system is based on state sovereignty. Since the mid-1970s, international biodiversity law and governance are based on legal regime theory, which has emerged as a great solution, seeking a balance on resource allocation among the norms of conservation, preservation, and exploitation. In the study of International Relationship, neoliberal institutionalism has dominated the area of global biodiversity governance based on regime theory.[777] Customary international norms have become a fundamental component of biodiversity and other regimes related to it. Stephen D. Krasner (1983) defined that "regimes" are involved with a variety of "implicit or explicit principles, norms, rules and decision-making

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[770] Van Harro, above n 168, at [35-39].
[771] ILC *Fragmentation of International Law,* above n 205, at 1.
[772] At 1.
[773] At 1.
[774] Ralf Michaels and Joost Pauwelyn "Conflict of Norms or Conflicts of Laws?: Different Techniques in the Fragmentation of Public International Law" (2012) 22 *Duke Journal of Comparative & International Law*, at [349-376].
[775] Franklin G. Snyder "Nomos, Narrative, and Adjudication: Toward a Jurisgenetic Theory of Law" (1999) *William. & Mary L. Rev*. Vol. 40, Issue 5, Article 6, at [1624-1729].
[776] Michaels and Pauwelyn, "Conflict of Norms or Conflicts of Laws?: Different Techniques in the Fragmentation of Public International Law", above n 774, at 351.
[777] Van Harro above n 168, at 29.

procedures" around which all state-actors (as a legal personality) are in agreement on in a particular area of international relations.[778] Success of regime operation may rely on strong cooperation, implementing treaty, allocating right/duties of state sovereignty. Regime scholars argue nevertheless that the core of international regime is "a cluster of rights and rules [whose] exact content is a matter of intense interest to these actors."[779] Basically, those who construct the regimes have initiatives and rights and rules reflect decisions regarding or relating to which kinds of state behaviors should be supported and banned.[780] Regime theorists assume that such norms influence state behaviors, while on the other hand, the norms are also created by the pursuit of nation states' interests.[781] The regime theory stands on the contract paradigm among sovereign state actors in the absence of legal enforcement. It assumes that rules and norms in a form of regime can capture more concentration in terms of those that are legally binding related to the particular interest.

Scholars who specialize in international relations suggested that cooperation and coordination among separating institutions and regimes are important to deal with the consequence of multiple clusters (fragmentation).[782] Hence, those bio-environmentally focused treaties still depend on political cooperation (in good faith), and economic negotiation via traditional legal instruments of compliance, in general. Yet, under the current neo-liberalism cooperation and coordination cannot escape from the anthropocentric paradigm. In other words, human activities such as trade and investment (green economic) will become the first priority as usual.

Throughout the environmental movement from the 1972 Stockholm to the 2012 Rio conferences, the treaty regimes on bio-environmentally focused protection have constructed the actors and institutions with the policy-making process, involving businesses and civil societies and others. While the regime system is widely used in the biodiversity-environmental area, it has been criticized that those regimes are ineffective to deal with the current global environmental problems. David Leonard Downie as cited by Gustave J. Speth and Haas M. Peter (2006) point out that several impediments lead to difficulty of success in regime system.[783] For instance, international cooperation is loosely cohesive in contrast with the large-scale environmental threats.[784] With respect to reaching an agreement in relation to collective responsibility to avoid overexploitation, for example, nation states hold out absolute sovereign rights regardless of community interests. The procedural hurdles occur if several nation states do not

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[778] Stephen D. Krasner "Structural Causes and Regime Consequences: Regimes as Intervening Variable" in Krasner D. Stephen (ed) *International Regimes* (Cornell University Press, NY, 1983) at 2.
[779] Robert O. Keohane "Against Hierarchy: An Institutional Approach to International Environmental Protection" in Peter M. Haas, Helge Hveem, Robert O. Keohane and Arild Underdal (eds) *Complex Cooperation: Institutions and Processes in International Resources Management* (Scandinavian University Press, Oslo, 1994) at 22.
[780] Andreas Hasenclever, Peter Mayer and Volker Rittberger *Theories of International Regimes* (Cambridge University Press, NewYork, 1997) at [14-15].
[781] Robert O. Keohane and Joseph S. Nye Jr. *Power and Interdependence* (3rd ed, Longman, NewYork, 2001) at [9-17].
[782] At [21-23].
[783] James Gustave Speth and Peter M. Haas *Global Environmental Governance* (Island Press, Washington, 2006) at [101-103].
[784] At 102.

demonstrate concern in relation to global environmental problems as its domestic problem, so they do not join the agreements.[785] Negotiation and bargaining among stakeholders often take a very long time to reach the final decision. At this point, it implies that powerful countries tend to lobby others to adapt or direct agreements to fit their own interests.[786]

In contrast, although the bio-environmentally focused threats require urgent and direct actions, environmental solutions represent a long-term project that requires accomplishing direct action to resolve the core of the environmental problems, rather than the other way around. Whereas some environmental problems such as climate change mitigation or biodiversity resilience require a long term solution to continue, political leaders or heads of State have preferred a short term approach. As a result, they have negotiated to change policies that fit for their own short-term political election term. Furthermore, many of these solutions rely on an approach that is based on technological-fix that have costs and benefits that can incur to the owners of the know-how technology.[787]

4.6 Conventions related Biodiversity

As mentioned in the introduction, Conventions-related biodiversity can be grouped into two clusters. The first cluster is known as "the seven biodiversity-related Conventions"[788] and the second cluster is called "the Rio Conventions"[789].

4.6.1 The UN Convention on Biological Diversity (CBD), 1992[790]

The CBD is the legal-binding agreement, addressing the whole components of the Earth's bio-diversity into the framework of sustainable development.[791] It is strongly believed that poverty resulted in biodiversity loss in developing countries, so an integrated approach of sustainable development could contribute to biodiversity conservation.[792] The CBD governs all levels of biological resources from genes, species, to ecosystems on the planet (except for human genes). At the first draft, the CBD was initiated and organized by the International Union for the Conservation of Nature (IUCN) in relation to the United Nations Environmental Program (UNEP).[793] The CBD was assumed to be a 'Deep-Green' treaty that protected the Earth's bio-diversity as a whole under the concept of common heritage beyond political

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[785] At 102.
[786] At 103.
[787] Michael Huesemann and Joyce Huesemann *TECHNO-FIX: Why Technology Won't Save Us or the Environment* (New Society Publishers, British Columbia, 2011) at [50-53].
[788] CBD *Handbook of the Convention on Biological Diversity : the Relationship of the Convention on Biological Diversity with the Commission on Sustainable Development and Biodiversity-Related Conventions, Other International Agreements, Institutions and Processes of Relevance* CBD/COP 4 decision IV/14 and 15 (Taylor & Francis, Eartscan, NewYork, 2001) at 504.
[789] CBD "The Rio Conventions" CBD/COP/ 3 Decision III/21(1), and IV/15(13), V/21(3), VI/20(9), VII/26(1).
[790] Convention on Biological Diversity 1760 UNTS 30619 (entered into force 29/12/1993).
[791] *The Future We Want* UNGA A/Res/66/288 (2012).
[792] At 2.
[793] Regine Anderson *Governing Agrobiodiversity: Plant Genetics and Developing Countries* (Ashgate, Burlington, 2008) at [118-120].

boundary. From 1981 to 1992, as a result of international politics, the perspective of bio-diversity changed from bio-diversity as life to commodities as property. Later, throughout the drafting and negotiating process, common heritage was shortly declined because of the concern of several developing countries about losing their absolute sovereignty over their natural resources. With respect to the transformative approach of global governance for safeguarding the entire Earth's bio-diversity as the global commons, it seems it has deferred to the national level.

The CBD, a legal regime, aims to conserve global biodiversity through the protection of genetic, species and eco-system diversity, and to establish terms for the associated uses of bio-diversity resources and technology (bio-technology).[794] The Convention's three main objectives include: (1) to conserve bio-diversity; (2) to use bio-diversity sustainably; and (3) to share the benefits of bio-diversity fairly and equitably. Ideally, its unique combination of both sustainable use and conservation, supplemented by the socio-economic aspect in terms of the sharing of benefits is acceptable worldwide. Its principle under Article 3 affirms that States have 'sovereign right' over biological resources on territory with their own laws and policies.[795] States further have a general responsibility to prevent environmental harm to other states. The CBD encourages the Parties to cooperate for conservation and for the sustainable use of bio-diversity. In addition it encourages open access and share genetic resources in a 'fair and equitable' way on mutually agreed upon terms. The CBD recognizes bio-diversity conservation as a "common concern of humanity."[796] The convention emphasizes "the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere."[797] It is a responsibility of the state to use biotic resources in "a sustainable manner."[798] Conservation, sustainable use and access/benefit-sharing of genetic resources are three main objectives.[799] Pursuing the establishment of a protected area system, promoting community conservation/protection and technological transfers are also important roles of the CBD.

The CBD requires State parties to develop plans to protect biodiversity and report information on them.[800] The main principles include: bio-diversity conservation, sustainable use, and access and benefit sharing. This encourages the contracting parties to conserve genetic diversity within/out habitats for the purpose of sharing the benefits of those values to all countries. In-situ and Ex-situ managements ensure that those values will be protected and biological resources (genetic diversity) will be able to be used in a sustainable way.[801] Bio-technology and bio-engineering play a role as a tool to assist contracting parties to trade-off those genetic values into a form of tangible benefits, so accessing and sharing benefit must

[794] Philippe G. Le Prestre *(ed) Governing Global Biodiversity* (Ashgate, Burlington, 2002) at 58.
[795] CBD, artical 3.
[796] CBD, at Preamble.
[797] At Preamble.
[798] At Preamble.
[799] CBD, Artical 1.
[800] CBD, Artical 6.
[801] CBD, Artical 8-9.

be important. In an earlier decade the CBD was reliant on biotechnology based on free-trade in relation to genetic resources, attempting to conserve bio-diversity stock by eliminating poverty from the poor South. The CBD tends to encourage Parties to supply genetic materials to bio-technological business by ignoring the precautionary principle.

Later, the CBD offers the 2000 Cartagena Protocol on Biosafety ("the Cartagena Protocol"). The purpose of the Protocol is to control safe transfer such as the trans-boundary movement, shipment, handling and use of all living modified organisms (LMOs) that may have potentially negative impacts on the conservation and sustainable use of biological diversity, particular in terms of the threats to human health (Article 4 Cartagena Protocol). Article 1 of the Cartagena Protocol explicitly refers to "the precautionary approach" contained in Principle 15 of the 1992 Rio Declaration. The Cartagena Protocol has 167 Parties and was implemented in 2003. After the decade of vacuum on bio-safety remedy, two documents were enacted. Firstly, the COP agreed to establish the 2010 Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety in 2010. Secondly, the 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 ("the Nagoya Protocol") was adopted on 29 October 2010 and will be implemented 90 days after gaining Parties' support of the 50th instrument of ratification.[802] The focus of the Nagoya Protocol is to support the achievement of the Access and Benefit-Sharing. The Protocol is established by the CBD's requirement under Article 15, by facilitating a legal mechanism for State Parties to have or gain access to genetic resources and traditional knowledge associated with the global genetic trade, benefit sharing and compliance.

Due to the fact that the CBD existed within the 1992 Rio-Declaration's framework of sustainable development, so economic and social development as well as environmental protection were intertwined with the CBD's objectives. Le Prestre points out that the CBD is not only a preservation agreement, it also includes development and trade on genetic diversity.[803] Unlike a classical wildlife or protected area agreement, it was the first time that bio-diversity conservation as a concept was addressed in connection with poverty elimination[804] In terms of utilization in regard to biodiversity as raw materials for industrial sector, sustainable development attempts to focus on wise use that causes less impact to the integrity of ecosystems. So, cost-benefit analysis in biodiversity management took the lead to evaluate and design which kinds of species, ecosystems, and genes should be protected or others that should be ignored beyond ecological rationality.

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[802] *The 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* UNEP/CBD/COP/DEC/X/1 of 29 October 2010.
[803] Le Prestre *Governing Global Biodiversity,* above n 794, at 2.
[804] UNEP/GC Decision 15/34 (1989) at Preamble.

In terms of institutional governance, the CBD is administrated by the Conference of Parties, comprising members of State Parties known as the COP.[805] As can be seen under Article 23 of the CBD, the COP has its own authority to amend any protocols, and annexes.[806] Despite the fact that the CBD was originated by IUCN and later UNEP, it was no longer governed under UNEP or a part of it. Under Article 41, the depository of the CBD is the UN Secretary-General, yet not in UNEP.[807] At first, the Executive Director of UNEP had only provided the temporary Secretariat for launching a first meeting of the COP (Article 40). After the COP selected its own first Secretariat, the UNEP's temporary status ceased since it was no longer necessary (Article 24).[808] At this stage, the CBD and its COP has been said to be an independent institution with its own framework, and measures of implementation to be followed up. Now, governing the Earth's bio-diversity has fallen into the hands of States to regulate and manage bio-diversity according to its own agendas.

4.6.2 The Convention on Wetlands of International Importance, 1971, (the Ramsar)[809]

Like the CBD, the Ramsar Convention is based on sovereignty rights over its own wetlands. The Convention endows the framework for domestic actions, plans, and regional/international cooperation for the conservation and 'wise use' of wetlands and others related to them. It is the first global environmental treaty, focusing on a specific ecosystem.[810] The preamble declares the conservation of wetlands and ecological wellbeing, ensured by combining overarching domestic activities with global collaboration.[811] Grounded on states' voluntary implementation, the Convention includes one legal rule, the obligation to designate suitable wetland and little of substance for addition in the list of wetlands of international importance.[812] Significantly, several characters of selection for inclusion in the list are to be determined by the application of ecological, botanical, zoological, limnological, or hydrological criteria.[813] However, the listed wetland does not impact the exclusive sovereign rights of the States in whose territory the wetland in situated.[814] More importantly, the core of the Convention's philosophy points to the principle "wise use" concept. At the first signal in 1980, the original context of wise use was placed under the stronger preservation which meant 'non-use.'[815] Yet, after it was amended in 1987 the stronger sense of non-use was declined to sustainable use.[816] After sustainable development clearly existed in 1992, the Convention

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[805] CBD, *Handbook of the Convention on Biological Diversity* (Earthscan, Sterling, 2001) at xxiii.
[806] CBD, Article 23(4).
[807] CBD, Article 41.
[808] CBD, Article 24.
[809] The Convention on Wetlands of International Importance 996 UNTS 14583 (entered into force 21/12/1975).
[810] Douglas E. Fisher "Freshwater, Habitats and Ecosystems" in Shawkat Alam, Md Jahid Hossain Bhuiyan, Tareq M.R., Chowdhury and Erika J. Techera *Routledge Handbook of International Environmental Law* (Routledge, London, 2013) at [227-243].
[811] The Ramsar, at the Preamble.
[812] At Article 2 (1)
[813] At Article 2 (2)
[814] Fisher "Freshwater, Habitats and Ecosystems", above n 810, at 228.
[815] At [239-240].
[816] At 240.

redefined its own version of the wise use of wetlands as “the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development.”[817] That means the ecological values of the wetland could be wisely used based on human interest at first. At this point, the spirit of the Convention seems to lose ground. Therefore, if the purpose of the wise use is for waterfowl that are birds ecologically dependent on wetlands,[818] how to achieve the 'real' wise use could be to enhance the quality of local communities whilst living within the carrying capacity of supporting ecosystems.[819]

4.6.3 Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972 (UNSECO)[820]

The UNSECO focuses on preserving natural heritage beyond national boundary, promoting the values of conservation, and creating a collective obligation to State Parties.[821] It recognized that those values of cultural and natural heritage are "as part of the world heritage of mankind as a whole."[822] Basically, natural conservation of the UNSECO is concerned with protecting endangered species. The key concept of the Convention is the common heritage of mankind aiming to ensure the protection of natural environments beyond a national jurisdiction. However, the natural heritage sites listed by the convention are linked directly to state sovereignty as stated in Article 4. It is important to note that conservation of biodiversity as a common heritage of humankind is still limited within scope of anthropocentric view.

4.6.4 The Convention on International Trade in Endangered Species, Washington, 1973 (CITES)[823]

Similar to the CBD, CITES is an international agreement that provides a framework for State Parties to implement national legislation in relation to the regulation of trading wild animals and plants specimens.[824] Wildlife species that have been threatened by illegal trade are listed in three categories. CITES protects wildlife species that are endangered as well as those that are not endangered in order to assure their sustainable trade. In fact, international wildlife trade is a multi-million dollar business that generates capital throughout the world economy. In order to ensure that this international wildlife business will run sustainably, those stock species need to be conserved as long as market demand exists. This means that

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[817] Clare Shine *Wetland, water, and the law: using law to advance wetland conservation and wise use* (Gland, Switzerland IUCN, 1999).
[818] The Ramsar, at Article 1 (2).
[819] IUCN, UNEP, WWF, *Caring for the Earth: A Strategy for Sustainable Living* (IUCN, UNEP, WWF, 1991) at 10.
[820] Convention for the protection of the world cultural and natural heritage 1037 UNTS 15511 (entered into force 17/12/1975).
[821] Douglas E. Fisher “Legal and Paralegal Rules for Biodiversity Conservation: A Sequences of Conceptual Linguistic and Legal Challenge” in Michael I. Jeffery, Jeremy Firestone, and Karen Bubna-Litic (eds) *Biodiversity Conservation, Law+Livelihoods: Bridging the North-South Divide* (the IUCN Academy of Environmental Law Research Studies, Cambridge University Press, 2008) at 103.
[822] UNESCO, at Preamble.
[823] Convention on International Trade in Endangered Species of Wild Fauna and Flora 993 UNTS 14537 (entered into force 1/7/1975).
[824] Fisher “Legal and Paralegal Rules for Biodiversity Conservation”, above n 821, at 234.

exotic endangered species can be traded to the world pet market as long as they are not directly taken from the wild. Ivory can be traded if the world population of elephant still remains safe and protected.

4.6.5 The Convention on the Conservation of Migratory Species of Wild Animals, 1979 (CMS)[825]

In terms of a slightly different approach from CITES, according to the Preamble, the Convention recognizes that "wild animals in their innumerable forms are an irreplaceable part of the Earth's natural system which must be conserved for the good of mankind...."[826] Although the term 'for the good of mankind' has no specific definition codified in the text, it shall be understood under a sense of common concern of humankind. So, the listed species of the CMS are protected as the global commons. By considering the listed species as the core concern of protection, the fundamental principle here has been reflected in connection to the doctrine of limited territorial sovereignty and community of interests. Its result demands state obligation to avoid exercises/activities as "Taking" that could have potential harms to the listed species.[827] The CMS aims to protect wildlife species in their migration and their habitat beyond national boundary. The spirit of the Convention leads to the human obligation to conserve the Earth's legacy and to utilize and use wisely.[828] The Convention defines the term "Range" in a very advanced text. By focusing on the welfare of the listed species, the provision makes sure that "all the areas of land or water that a migratory species inhabitants, stays in temporarily, crosses or overflies at any time on its normal migration route..."[829] Therefore, when the entire population or a group or a part of the 'migratory species'[830] migrates into the range of another national jurisdiction, 'a range State'[831] under the Article VI shall limit in taking the listed species.[832]

4.6.6 The Convention to Combat Desertification, 1994 (UNCCD)[833]

There are the interconnections between the UNCCD and other treaties related to biodiversity. Intrinsic values of biodiversity can be recognized as ecological interdependence between the land and life forms. By nature, the quality of good soil depends on the biological diversity of the land. In regard to the diversity of life forms that produce good soil it is protected from strong winds and sunlight by plants and by the shade of trees. Protecting the community of life of the land is a way to mitigate drought and expanding desertification. The UNCCD calls for the actions of the affected or threatened states' parties to combat the proliferation of the desert, and identified the term desertification as "land degradation resulting from

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[825] Convention on the Conservation of Migratory Species of Wild Animals 1651 UNTS 28395 (entered into force 1/11/1983),
[826] At Preamble.
[827] At Article I/1 (i-k).
[828] At Article I/1 (i).
[829] At Article I/1 (f).
[830] At Article I/1 (a).
[831] At Article I/1 (h).
[832] CMS, at Article VI.
[833] United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa 1954 UNTS 33480 (entered into force 26/12/1996).

various factors including climate variations and human activities."[834] It mandates obligations to the states to fulfill their implementation to alleviate the impacts of drought. It also reaffirms the state's sovereignty over natural resources, and urges responsibility for their activities to control environmental harm. In order to achieve the objectives, under Article 3, it asserts that State Parties "shall develop cooperation among all stakeholders to establish a better understanding of the nature and value of land and scarce water resources." Sustainable use of land is mentioned.[835] The UNCCD places obligation to the Parties to cooperate or join another treaties and adopt the integrated approach that can achieve its objectives.[836]

4.6.7 The United Nations Framework on Climate Change, 1992 (UNFCC)[837]

Currently, it is obvious that human activities have contributed to climate change, which has had a negative impact in terms of loss of biodiversity, the quality of ecological health on the planet and human's wellbeing. This ecological connection leads the UNFCC to other treaties related to biodiversity. The UNFCCC aims to protect the atmosphere by reducing greenhouse gases from human activities through the atmosphere.[838] As stated in Article 2 that "stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[839] To achieve its goal it is necessary for the entire international community to be in solidarity and unity to commit to reduce the greenhouse gas emissions. It is urgent that climate change is solved because it affects natural ecosystems and humankind as a whole. The UNFCCC provides key principles such as the 'equity,' 'the common but differentiated responsibilities,' the 'vulnerability,' the 'precaution,' and the 'sustainable development.' In addition to the UNFCCC, the Kyoto Protocol,[840] a supplementary agreement of the UNFCC, demands Parties set a binding target for reduction of greenhouse gases emissions. Its role provides practical mechanisms relevant to the framework of the UNFCC, including joint implementation,[841] clean development mechanism[842], and international emissions trading,[843]

4.6.8 The International Treaty on Plant Genetic Resources for Food and Agriculture, 2004 (IT PGFA)[844]

Known as the International Seed Treaty, the IT PGFA is an international legal-binding agreement that is associated with the CBD.[845] In order to ensure that economic values of the Earth's plant genetic

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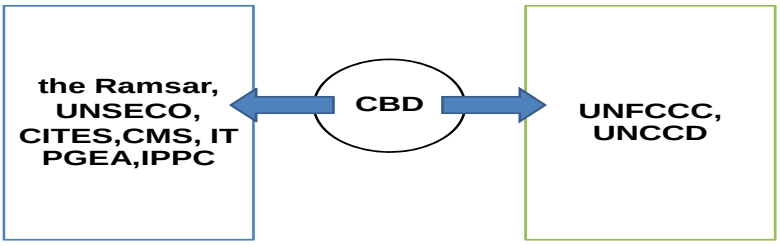
[834] At Article 1 (a).
[835] At Article 3 (c).
[836] At Article 4.
[837] United Nations Framework Convention on Climate Change 1771 UNTS 30822 (entered into force 21/3/1994).
[838] At Preamble.
[839] At Article 2.
[840] Kyoto Protocol to the United Nations Framework Convention on Climate Change 2303 UNTS 30822 (entered into force 16/02/2005).
[841] At Article 4.
[842] At Article 12.
[843] At Article 17.
[844] International Treaty on Plant Genetic Resources for Food and Agriculture UNTS 2400 (signed 03/11/2001, entered into force 29/06/2004).
[845] Andersen *Governing Agrobiodiversity,* above n 793, at 87.

resources will be utilized for the food and agricultural sectors, the objectives of the Convention promote food security through biodiversity conservation, trade-offs and sustainable use with fair and equitable benefit sharing arising from their use.[846] It also protects 'farmer rights' from 'a free rider' who may gain access to unauthorized genetic resources that are based on intellectual property rights regimes. In regard to traditional knowledge rights, they are subjected to national laws.[847]

4.6.9 The International Plant Protection Convention, 1952, amended 2005 (IPPC)[848]

The IPPC is the latest member of Liaison Group of Biodiversity-related Conventions.[849] The main objective of the Convention is to prevent the proliferation and introduction of pests of plants and its products with a focus on plant pests'/diseases' control. Like traditional treaty based statehood doctrine, the IPPC demands state's responsibility within national jurisdiction.[850] Under Article II, the term "plant" comprises all living plant species and all parts of its (including genes) and the term "pest" to cover "any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products".[851] With the wide range of definition the commentator points that the IPPC addresses all issues in terms of the risks related to the proliferation of plant pests, including the international transportation.[852]

Figure 3: CBD's Joint Liaison Group



The diagram shows the relationship between the CBD and two other groups. The Seven Biodiversity-related Conventions have their role to conserve and protect biological resources in the in-situ and ex-situ areas that are impacted by direct human-made damages such as deforestation and overexploitation. So, humans can use those biotic resources for social-economic development in relation to tourism and

[846] ITPGFA at Article 1.
[847] Andersen, above n 793, at [86-89].
[848] The International Plant Protection Convention 2367 UNTS 1963 (entered into force 02/10/2005).
[849] CBD *Biodiversity-related Conventions* (15 May 2013) <www.cbd.int/brc/>.
[850] IPPC, at Article I.
[851] At, Article IV.
[852] William Roberts "the Revised International Plant Protection Convention: a New Context for Plant Quarantine" in R.N. Strange and M.L. Gullino (eds.) *The Role of Plant Pathology in Food Safety and Food Security: Plant Pathology in 21st Century* (Springer, Dordrecht, 2010) at 133.

agriculture, for example. And the Rio Conventions prevents the effect of climate change and prolonged drought that impacts fragile biodiversity through the indirect human-man damages such as GHGs loaded to the atmosphere. Both groups rely on the integrity of biodiversity as a fundamental matter to achieve their aims. As a joint-connector, the CBD has gained more advantage to set forth the rules and operational procedures for other regimes that relate to the earth biodiversity commons. At this point, if the rules are set to protect the Commons, the aims of cooperation are much more appreciated. However, it is important to note that only the CBD under the Article 2 views biotechnology as providing substantial potential benefits. The CBD operation is clearly grounded on neoliberal biodiversity because the CBD has a relationship to biotechnology and international property regimes more than other regimes. That consequence of this CBD's cooperation may allow the biotechnological companies and the state government to take control of the biodiversity commons.

4.7 Failure of Economic Cooperation based Business Contract Approach

Due to depletion of biological resources, the demand for conservation requires agreement to ensure that contract rules will be binding. The bilateral trade negotiation has promised to improve the effectiveness of multilateral legal regimes. No doubt about it, this trend has become one of the main topics of increasing importance in a variety of the existing international biodiversity regimes. However, whilst biodiversity as commodity is viewed as supporting sustainable development the concept of contractual agreement becomes a first choice. This traditional type of legal binding agreement is suitable in commercial and trade agreement, so it focuses on taking care of business and the allocation of the rights and duties of the parties in equality in the short term. Therefore, it is too flexible to assure, secure or protect all commitments through time. Scholars argue that this sort of current ‘bio-environmental’ regime has been used flexibly "to include the various institutions and structures of authority engaged in the protection of the natural environment."[853]

Here the weak status in ‘bio-environmental’ regimes has not been created by chance, rather on purpose. The unity of global biodiversity protection would interrupt the flow of biological materials to the global market and this could create a situation whereby the controlling or managing entity could be upset. As far as money can buy influence in negotiation, flexible contract will almost always benefit economic/trade regimes. So, contract based agreement allows absence of accountability enforced mechanism as compromise.[854] The consequence is creating a high stakes situation by giving the group of state parties or global investors the power to decide its own agendas and interests based on mutual profits/benefits over earth's biodiversity commons with no supremacy authority. This is not only a matter of treaty compliance it also involves inappropriate sovereignty rights and other legal principles related to it.[855] Under the globalization of free trade system, those more powerful nation states will take control over the negotiation and bargaining on the Earth's biodiversity.

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[853] Bosselmann, above n 284, at 175.
[854] Le Prestre, above n 794, at [62-63].
[855] Jóhannsdóttir, above n 175, at [203-207].

The weakness of the political cooperation based contractual concept agreement allows for ineffectiveness in state responsibility that erodes the core concept of such agreement. Friedrich Kratochwil points out that the problem of regime theory is as the "spot contract," allowing parties to enter freely into mutual promises and agree on an exchange of self-determination obligations.[856] In other words, the spot contract refers to an incomplete agreement that treats consent as fundamental for the allocation of responsibility. Therefore, the legal duty of this contract seems to be treated with a minimum obligation as much as a political obligation. As a result, the fundamental matter is turned to be voluntary choices of the parties. Kratochwil gave several reasons for his argument as follows. Firstly, the specific contract seems to allow poor performance.[857] Although state parties can perform, even if and as they perform, due to certain flaws in the specific terms in the structure of the ad hoc spot contract, it is not easy to avoid certain problems involved in the practice so mistakes can be made which could result in fraud as well as misrepresentation. At this point, the default of such contract opens the possibility for an error to occur.. And mistakes can be made which could result in fraud as well as misrepresentation. For example, in regard to the ecologically resilient approach, reforestation policy without proper concern related to plant diversity does not qualify. Although the numbers of green areas in the nation's report may show an increase, a low quality of the new growth forests still exists. Secondly, difficulties are likely to arise if the spot contract entails duties that required in-line action.[858] For example, state parties would do routine works such as annual year reports without improvement or restoring protected areas. In contrast, the anthropogenic climate change and loss of biodiversity are ongoing processes. Thirdly, there are several regimes dealing with the similar issues that lead to overlapping transactions, creating costs for management. Fourthly, the effectiveness of the contract-based regime depends on the commonly shared norms that support the particular bargains.[859] A serious dispute settlement is required, rather than settling a weak dispute for compromising in any specific round. Finally, for Friedrich, the spot-contract based regime is difficult to negotiate in terms of the long-term performance. Negotiation and bargaining in relation to the cost of management could change the long-term commitment.[860]

Therefore, if ‘bio-environmental’ protection regimes are not functioning well in terms of serious protection, the question has been cited enquiring into the reason that states have to form as a group and they obey rules that are often unenforced.[861] Andrew Hurrell points out that it is because of "a functioning benefit" known as the "carrots and sticks approach."[862] This approach offers the attractive rewards such as bio-technological transfers or financial funds. At the same time, it sets a low standard of obligation to

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[856] Friedrich Kratochwil "The Limit of Contract" (1994) 5 *EJIL* 4, 465, at 468.
[857] Friedrich Kratochwil "Contract and Regime: Do Issue Specificity and Variations of Formality Matter?" in Volker Rittberger and Peter Mayer (eds) *Regime theory and international relations* (Oxford University Press, Oxford, 1993) at [75-77].
[858] At 76.
[859] At 77.
[860] At 77.
[861] Andrew Hurrel "International Society and the Study of Regimes: A Reflective Approach" in Volker Rittberger and Peter Mayer (eds) *Regime Theory and International Relations* (Oxford University Press, Oxford, 1993) at [54-55].
[862] At 55.

encourage state parties to join the contract. However, the narrow self-interests of state parties through the mutually contractual benefit of the regime system can decrease the international common concerns and blur the idea of equality and justice. That is because state governments coordinate to ensure that every state will benefit from the agreement. Neoliberal biodiversity argues that without the shared benefit there are no means to draw state's agreement. Those who support the economic-cooperated approach (neo-liberalism) have brought the bias of distrust to back up their claim. By pointing out that in "the real world of anarchy" although the cooperation does not require altruism, the functioning benefits that those state parties provide is still necessary.[863] This cultural ideal is violent to Earth by monopolizing the global commons.

In terms of economic cooperation, those supporters seem to be comfortable to present that the State's government collaborate and assist each other to achieve the shared outcomes or benefits, emphasizing the "rational" nature of cooperation.[864] From this perspective, it could refer to benefits in terms of tradeoffs related to biodiversity conservation and exploitation, rather than preservation and protection from the act of cooperation. It also presents the concept of sound economic interests rather than rational cooperation in relation to a sound natural environmental protection program.

Serious concern has been expressed in terms of the dominant power of the large profit-dependent multinational enterprises that control many if not all of the biotic resources in many states. Many powerful enterprises have a capacity to set an international agenda that supports their own interests.[865] Although many environmental debates are reliant on scientific rationality, some uncertainty in the studies due to natural dynamics could exist. With this as an explanation, some may argue that decisions must be based on economic rationality. Hurrell presents a critical analysis that there is no clear rationality on an international level.[866] That is because international bargaining looks only at a relative gain based on the cost-benefit of cooperation.[867] So, there is no guarantee that neoliberal measurement could ensure that the conduct of corporations is prudent and consistent with the fundamental principle of safeguarding and restoring the ecological integrity of the Earth's ecosystem, or rational in terms of economic development. Hurrell explains that neoliberals are incapable of explaining the reason states should cooperate on moral or ethical grounds.[868] The sense of moral community should be expressed rather than the legal dimension.[869] He points out that once there is a common identification of some kind of moral community in which insight of potential common interests can emerge then there may be a prudential reason for all states to collectively cooperate. However, prudential rationality alone cannot guarantee success. He

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[863] At 56.
[864] John M. Hobson *The State and International Relations* (Cambridge University Press, NewYork, 2000) at [147-148].
[865] Vandana Shiva *Monocultures of the Mind : Perspectives on Biodiversity and Biotechnology* (Zed Book, London, 1993) at [83-84].
[866] Hurrel Andrew "International Society and the Study of Regimes: A Reflective Approach," above n 670, at [58-61].
[867] At [58-59].
[868] At [59-60].
[869] At 61.

suggests that it needs to be solved by "coercion" or "the role of a hegemonic power" or by a concept of the "pre-existence of community" exemplifying some common moral purposes.[870] Nonetheless, the moral argument would seem to play no part of those regimes unless the arguments capture the human welfare or the rights of the future generation. In accordance with the prevailing or conventional perspective, those moral arguments require anthropocentric views as their backup. For example, there are reasonable enough arguments to protect human rights via a sense of common moral concerns without legal obligation alone. So, why does it not protect the Earth's biodiversity for its own sake? The simple answer would be that it does not make any sense although the intrinsic values of biodiversity were recognized in the CBD.[871]

4.7.1 Fragmented Forests in case of Biodiversity related Conventions and Climate Change Regimes

Whilst a tree exchanges carbon dioxide and releases oxygen, forests are a home of biodiversity. It is clear that conservation and management strategies that maintain and restore biodiversity can be expected to reduce some of the negative impacts from climate change. Nevertheless, the conflicts occur between the replanting the new-growth forest and protecting the old-growth one. Whereas the forests throughout the world hold the large components of territorial biodiversity, at the same time territorial forest diversity is among the most complicated of issues with respect to biodiversity discourses. Regarding state occupancies, they are dependent on state jurisdiction and territorial sovereignty over the forests. As we discussed in the previous Chapter, in regard to biological resource exploitation, in particular, state sovereignty has often been employed as immunity against international enforcement.[872] Or, it depends on treaties in which State has joined. Failure to establish a legal binding treaty to address international forest law at the 1992 Rio Conference brought forest diversity back into the hands of the State. Since then, there are no treaties on governing forest diversity for itself .So in regard to several treaties relative to forests, territorial forest and its biodiversity have currently been treated in terms of their separate aspects.

In addition to the fragmented legal system, CITES protected listed species on illegal wildlife trades. CMS protected the migratory species on its list. While Wetland Convention and UNESCO protected the sites they are lacking holistic conservation/protection. The CBD addressed biodiversity conservation within in-situ and ex-situ sites. And whereas the CBD has promoted the ecosystem approach, consisting of the 12 principles to address all activities related to biodiversity, and forests, this attempt is just one of several programs that lack implementation in practice.[873]

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[870] At 61.
[871] CBD, at Preamble.
[872] Ellen Mary O' Connell "Enforcement and the Success of International Environmental law" (1995) *Indiana Journal of Global Legal Studies*, Vol.3, Iss.1, Article 4, at [47-64].
[873] Platjouw Maria Froukje "The need to recognize a coherent legal system as an important element of the ecosystem approach" in Christina Voigt (ed.) *Rule of Law for Nature: New Dimensions and Ideas in Environmental Law* (Cambridge University Press, NY, 2013) at [158-174].

The negative consequence of the fragmented approach entails conflicts of interest among bio-environmental regimes. Here the instance related to forests can be visible in the UNFCCC and the CBD. At the first sign, both regimes viewed forests from the same perspective. As can be seen in Article 1.1, 2, 4.1(d), and 4.8 of the Climate Change regimes recognized the ecosystem approach and promoted and cooperated in the conservation and to enhance carbon sinks and reservoirs throughout a whole range of the Earth's biomass.[874] There are not yet any treaties concerned with protecting the ecosystem of forests, rather than preserving the fragmented landscapes. Multiple approaches of global bio-environmental regimes do not express any eco-centric linkages (ecological sustainability) with respect to the origin and the fundamental principle that created them. So, without an international forest treaty, nation states and the COP can act freely to compel, propose or establish rule-based neo-liberalism to control the forests globally as well as their biodiversity.

Unlike the UNFCCC, the Kyoto Protocol had not clearly mentioned biodiversity and ecosystem as a part of climate change mitigation. However, it focused on the concept of sustainable development of forest in terms of the land-use system known as Land Use, Land-Use Change and Forestry ("LULUCF").[875] And to meet their emission reduction target using artificial growing forests as the carbon sinks (since this would not be harmful for their economic growth) is a first-choice to choose for the rich State to meet the provision.[876] As a flexible mechanism, this means the industrialized countries can trade their carbon credit by funding deforestation and reforestation programs in the hot-spot biodiversity developing countries (such as Costa Rica and Papua New Guinea) regardless of the biodiversity loss and ecosystem decline of the pristine forests.[877] Therefore, this climate activity is lacking careful and considered ecological concerns.

Even as the new growth forests have been promoted, the old growth forests have been devalued. The new form of neo-liberalism of biodiversity is the REDD-plus, referring to Reducing Emissions from Deforestation and Degradation of the Kyoto Protocol.[878] Here we can see that forests are considered to be a place of climate change mitigation through its role as carbon sinks alone.[879] In contrast, protecting forest genetic diversity is a core obligation of State parties of the CBD.[880] Both regimes have collided. While the LULUCF of Climate Change Convention and REDD+ of Biodiversity Convention focus on the capacity of carbon sinks between the old growth forests and artificial new growth tree farming, the genetic diversity and ecosystem services are less considered. According to a study, ecological functions are well

[874] UNFCCC, at Article 1.1, 2, 4.1(d), and 4.8.
[875] Kyoto Protocol, at Article 3.3, 3.4.
[876] Van Harro, above n 168, at [123-124].
[877] At 124.
[878] Rosemary Lyster "International legal frameworks for REDD+ ensuring legitimacy" in Rosemary Lyter, Catherine Mackenzie, and Constance McDermott (eds.) *Law, Tropical Forests and Carbon: the case of REDD+* (Cambridge University Press, NY, 2013) at [3-25].
[879] Kyoto Protocol, at Article 2.1 (a)(ii).
[880] CBD, at Article 8.

operational at the older pristine forests.[881] At this point, it means that the key point of the said forest projects should focus on the long-term restoration of ecological integrity in the area. Thus, it is a matter of time for both LULUCF and REDD+ projects to reach the status of the mature pristine forests.

Although the compensation and trade mechanism can be transferred from the UNFCC to contribute to the management of the forests to the CBD, it has been suggested that REDD+ might have negative consequences for the CBD to prevent biodiversity erosion.[882] While compensation may advise replanting a new tree, it cannot build the well functions of biogeochemical cycles. This is because the ecological life-supporting system is generated by 'old-growth' forests.

According to Asselt van Harro (2014), the side-effects of REDD+ could be the increasing of clear-cutting trees, monoculture plantations, ignoring to protect the old-growth forests, growing genetically modified trees and invasive species.[883] As we discussed in Chapter 1, that the rate of global deforestation had increased and anthropogenic climate changes have caused the CBD to fail to prevent the biodiversity erosion. REDD-plus becomes a strategy to convince industrialized countries that continually loaded greenhouse gases to the atmosphere to pay for forest sustainable management in the developing countries. By adding more funds to tree plantation for creating more carbon sinks could cause replacement of the rest of the old growth forests in a short time. The first priority is to protect the old-growth forests and adopt the resilient approach, after that compensation should be a secondary step. If we expect that the Kyoto Protocol and REDD+ will be achieved, the urgent need is to clarify the term "ecological sustainability and then establish a legally binding international forest protection instrument and/or increase the larger scale/size of the protected areas.

The genetic diversity of trees and wildlife represents the primary source of ecological integrity of forests. It is important to note that while the classical problems such as habitat/wildlife protection have not yet been solved, a new problem in terms of the DNA market trade is also occurring. Anthropocentric neoliberal biodiversity can also be noticed in the 2010 Nagoya Protocol. The CBD aims to ensure that genetic diversity will be conserved for tradeoff as potential raw materials for biotechnological or pharmaceutical businesses. To collect the genetic diversity from the wild, the CBD and the Nagoya Protocol allow bio-prospecting activities. Since the development of genetic engineering in biodiversity emerged in the late nineteen century, the new technical DNA modification has brought diversity of life forms to the market. This is due to the fact that biodiversity is related to agriculture as well as pharmaceutical aspects and also that every life form contains a potential medical value. By adding economic values to intrinsic values, this tends to increase the trade demands. Since common species or unlisted species become more economically valuable, they are at risk of decimation as they are being taken indiscriminately from the

[881] Sebastiaan Luyssaert, E. -Detlef Schulze, Annett Börner, Alexander Knohl, Dominik Hessenmöller, Beverly E. Law, Philippe Ciais & John Grace "Old-growth forests as global carbon sinks" (2008) *Nature* 455, at 213-215.
[882] Van Harro, above n 168, at [130-133].
[883] At 130.

wild. The negative impact of taking some parts of biodiversity out of its community can be seen in the decline of the Tokay Gecko *(Gekkonidae)* in Southeast Asia.[884]

Another example can be seen in a case of the loss of forest genetic diversity, Siamese Rosewood.[885] The report shows the erosion of Siamese rosewood *(Dalbergia cochinchinensis Pierra)* in the Mekong region that has been logged illegally and traded to serve the demand of the wood market in China.[886] As usual, the report proffered the recommendation to CITES to list such species on the protected list, and also, to extend more legal duty, commitment and obligation to State's parties.[887] So, within the framework of international trade on wildlife regimes, the species was listed in appendix II, coming into force on 12 June 2013.[888] It is necessary to acknowledge that the originated cause of biodiversity erosion develops from neoliberal biodiversity's influences. In this Mekong regime, before Siamese rosewood caught economic attention, the species has been able to survive extinction for a long time, while Teak *(Tectona grandis L.f.)* and Eagle wood *(Aquilaria crassna Pierre ex Lec)* have both suffered a serious decline from the wild. In common, Siamese rosewood was considered one of the common trees found throughout the Mekong's forestlands. Rosewoods were not a first choice in comparison to Teak and Eagle wood for local people to take a risk to illegally cut them. The intrinsic values of Rosewood have never been changed to commercial value before, so they were able to survive and remain free from the marketplace. This insight is the most important understanding that neoliberals for some reason do not appear to realize and understand. In this case, neo-liberalism has increased the demands of the global timber market to trade in a new product of wood that is not yet ready to be open for trade.

Under neoliberal influence, whereas economically sustainable development has driven international trade agreements in the form of a bilateral agreement, the FTA has ground down the perspective of the global concerns.[889] Nation states as a part of international community break away from global responsibilities by administering, conducting, directing, regulating and governing making a bilaterally contractual agreement regardless of universal norms and principles. To be fair, internationally economic tensions in a context of a trade sanction have become a popular instrument to regulate trade pressure in relation to environmental protection such as in the cases of the Sea Turtle and Shrimp Trade or Dolphin-Tuna.[890] Still and all even though the trade sanction does directly protect the target species that have been

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[884] Olivier S. Caillabet *The Trade in Tokay Geckos Gekko Gecko in South-east Asia: with a case study on Novel Medicinal Claims in Peninsular Malaysia* (Traffic Southeast Asia, Selangor, Malaysia, 2013).
[885] Environmental Investigation Agency "Routes Extinction: The corruption and violence destroying Siamese rosewood in the Mekong" (2014) at [1-24] <http://eia-international.org/routes-of-extinction-the-corruption-and-violence-destroying-siamese-rosewood-in-the-mekong>.
[886] At 23.
[887] At 24.
[888] CITES, CoP16 Prop.60 (July, 2014) at [1-9].
[889] David Vivas-Eugui and Maria Julia Oliva *Biodiversity Related Intellectual Property Provisions in Free Trade Agreements: Issue Paper 4* (ICTSD, Geneva, 2010) at [1-6].
[890] David T. Suzuki and Holly Dressel *From Naked Ape to Superspecies Humanity and the Global Eco-Crisis* (eBook, ProQuest ebrary, 2004) at 275; See also, John C. Kunich *Ark of the Broken Covenant: Protecting the World's Biodiversity Hotspots* (Praeger Publishers, Westport, 2003) at 74.

impacted by trade, it does not directly intend to protect marine biodiversity as well as the integrity of the ocean. It could be argued it is actually trade discrimination under the name of environmental protection.

It is visible that the model of the cooperation based business contractual agreement is for the purpose of commerce and trade in the Earth's resources, *per se*. In this way enhancing international cooperation in itself can be seen as increasing the strong bond in terms of business security or economically sustainable development.[891] And again this cooperation could allow for unfair and unjust resource allocations, monopolization and so forth. Furthermore, since sustainable development based on free-marketing globalization has been legislated and manipulated across the international political agendas, it has tended to increase the domination among regimes wherein one might tend to be increasing more powerful and have more clout compared to other regimes. For instance, the World Trade Organization (WTO) and Trade Related Aspects of Intellectual Property Rights (TRIPS) have set forth and proposed a strong approach to protect economic aspects over biodiversity conservation of genetic diversity of plants and animals. As a consequence, the stronger institution could have been in charge to conclude the final decisions in several international conferences.

It has been suggested that the neoliberal institution of biodiversity related regimes require economic actors to make decisions based on individual economic gain, so the linkage has also been made.[892] As cited in Le Prestre (2002), the United Kingdom's Global Environmental Change Programme (GECP, 1999) pointed out that the effectiveness of the biodiversity regime system was dependent on the promise of social benefits, such as, for example, poverty reduction and working out a way of boosting the business competitiveness.[893] In response, the term "Global Compact" has been promoted by the United Nations since 2004. It aims to draw the attention of the world businesses to implement in line with "the UN's ten universally accepted principles"[894] which addresses the areas of human rights, labor, environment, and anti-corruption.[895] This is despite the fact that certain conflicts between environmental protection and economic development have not yet been resolved. By pointing out that business is a primary driver of (free-market) globalization, this pact of businesses could increase the level of tension in terms of the priorities of our environment and biodiversity.

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[891] *Cooperation with other conventions and international organizations and initiatives* CBD/COP 7 Decision VII/26 at paragrah 3,4.
[892] Gismondi *Ethics*, *Liberalism and Realism in International Relations* above n 61 at 21.
[893] Le Prestre, above n 794, at 63.
[894] *The UN Global Compact* UNGA./Res./56/76, A./Res./58/129, A./Res./59/288, A./Res./60/215, A./Res./60/1, A./Res./60/207, A./Res./62/211, A./Res./64/223,A./Res./66/223, A./Res./68/234, source available at <https://www.unglobalcompact.org/AboutTheGC/Government_Support/general_assembly_resolutions.html>.
[895] *Preventing and Combating Corrupt Practices and Transfer of Assets of Illicit Origin and Returning such Assets, in Particular to the Countries of Origin, Consistent with the United Nations Convention against Corruption* UN GA/Res/60/207 (2006).

4.8 The Wrong Turn: Biodiversity Neoliberal Institutions

Due to certain fragmentation related to international 'bio-environmental' regimes, there has been a call for closer cooperation to share expertise and scientific information to improve standards. In fact, this attempt places pressure on those treaties related to biodiversity. Increasingly, joint-agreement initiatives between the Biodiversity Convention and other treaties-related to biodiversity aim to enhance a stronger bond for scientifically cooperative management (biotechnology), and genetic trade. The joint-agreement initiative, 'Liaison Group of Biodiversity-related Convention' has been created to administrate the agendas and policies of the group meetings and their own meetings.[896] The group of treaties related to biodiversity has existed since 2002 to enhance further international cooperation. At present, there is the CBD, the CMS, the CITES, the ITPGRFA (with the International Undertaking on Plant Genetic Resources ("IU, 1983"), the Ramsar, the UNESCO and the IPPC.[897]

After they joined together, a wider range of the Earth's biodiversity (genes, species, ecosystems and landscapes) was under its direction. With the capacities of the CBD, genetic trade in relation to endangered species that are listed by CITES could be more available to sell. Other natural sites where there are restrictions and protection for commercial use by UNESCO or Wetland Convention could be more welcomed for sustainable use, particularly related to the tourism industry. Access and benefit sharing from genetic trade could bring more foreign income for the developing countries. In 2010, after a decade of negotiation, the final two Protocols were established; the Nagoya Protocol on Access to Genetic Resources and benefit sharing ("the Nagoya Protocol") and the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Bio-safety, ("the Nagoya-Kuala Lumpur Supplementary").[898] However, with respect to the Cartagena, its legal capacity is very limited to protect genetic loss in wild habitats because the Protocol focuses only on transportation and use on living modified organisms.[899] So, the 2010 Supplementary could be still far more successful to take civil legal action against the Bio-tech companies. In response to it, the seven giants of biotechnological companies[900] have established "the Compact: A Contractual Mechanism for Response in

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[896] CBD/COP 7 Decision VII/26, above n 700.

[897] CBD "Biodiversity-related Convention: the Seven biodiveristy-related convention" (25 May 2012) <www.cbd.int/brc/default.shtml>.

[898] CBD "the Nagoya Protocol on Access to Genetic Resources and benefit Sharing" and "the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress to the Cartagena Protocol on Biosafety, 2010" (25 May 2012) <http://bch.cbd.int/protocol/supplementary>.

[899] Brand Ulrich and Christoph Görg "Regimes in Global Environmental Governance and the Internationalization of the State: the Case of Biodiversity Politics" (2013) 1 *International Journal of Social Science Studies* 1, at 110-121.

[900] The Leading agricultural biotechnology provider companies: BASF Plant Science Company GmbH, Bayer, CropSciences, Dow AgroSciecnes, DuPont, and Monsato and Syngenta; See also, *the Compact overview assuring timely response in the event of damage to biological diversity* (25 May 2012) at <www.biodiversitycompact.org/wp-content/uploads/Assuring-timely-Response-in-the-event-of-damage-to-biological-diversity.pdf>.

the Event of Damage to Biological Diversity Caused by the Release of a Living Modified Organism."[901] The main topic of the Compact elaborates particularly in terms of legal conditions and a limitation in its own liability. At this point, with the power of the Compact of the big Seven companies, they have formed an alliance to protect their scientific information and benefits. There is ongoing debate and discussion within groups of global civil societies.

However, it is necessary to acknowledge and be aware that there are differences between cooperation and conspiracy. Under the slogan of conservation and use for the wellbeing of present and future generations, the CBD as global institution manages the genetic trade governance to expand wider access to the Earth's biotic resources around the world. It is claimed that under the benefit-sharing contract, the rich North has advanced biotechnology and the poor South has raw materials, so genetic trade becomes an accepted solution. Regardless of the harmful impacts of genetic modified organisms (GMOs), biotechnology and genetic engineering have already been established in the CBD as a means for supporting conservation.

The main concern here is that the CBD is a genetic trade with a somewhat vague definition consisting of several key words, viewing biodiversity through the lens of commodities. While the Group of Seven will improve and empower global biodiversity governance, it is necessary to note that cooperation has a potential risk that the Group's decision could be dominated by trade and intellectual property regimes. Due to this it can be seen that there have not been any restricted protocols on protected areas or forests, or any clear definition that exists that has been presented by the CBD during the past decades, with the exception of the Cartagena and Nagoya Protocol. This is if we assume that the Group of Seven has not intended to cooperate to protect the Earth's biodiversity, rather to protect State's interests and its partners on commercial and economic values of its own biotic resources. It has been suggested that since cooperative management among regimes has been established, the coordination seeks to achieve the sustainable development goals, rather than environmental protection.[902] It can be seen that while the Group of Seven has already been inter-connected for decades, ecological networks, biodiversity corridors, and buffer zones between differential state territories are rarely promoted.[903]

What kinds of links and cooperation is it that the CBD creates? It is important to note that only the CBD can link the other five treaties to intellectual property regimes. Under Article 12 (research and training), Article 16 of the CBD (access to and transfer of technology), 17 (exchange of information), 18 (technological and scientific cooperation) and 19 (handling of biotechnology and distribution of benefits), industrialized parties have a specific obligation to provide and/or facilitate technological transfers to

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[901] Thomas J. Carrato, John Barkett, and Phil Goldberg "The Industry's Compact and Its Implications for the Supplementary Protocol" in Shibata Akiho (ed.) *International Liability Regime for Biodiversity Damage: The Nagoya-Kuala Lumpur Supplementary Protocol* (Routledge, 2014) at [218-239].
[902] Donald K. Anton "The 2012 United Nations Conference on Sustainable Development and the Future of International Environmental Protection" (2012) 7 *Consilience: The Journal of Sustainable Development* 1, at [64-72].
[903] Bennett Graham and Mulongoy Jo Kalemani *Review of Experience with Ecological Networks, Corridors and Buffer Zones* (Secretariat of the CBD, Technical Series No. 23, 2006).

developing countries based on mutually agreed upon terms. Indeed, the CBD, Article 16 (5) has already created a link on biotechnology to patents and other IP regimes related to the TRIPS agreement.[904] However, it does not signify that the developing country will gain free access to the know-how of those advanced technologies of private/public sectors.

Furthermore, there are two ways developing countries can gain access to the biotechnological know-how. Firstly, it is to purchase the technology and/or licensing agreement and secondly accepting funds from the donors. Both options have an impact on state sovereignty over genetic biodiversity. By purchasing/licensing from developing countries, they are locked by property regimes. Secondly, by accepting financing via funds they are locked by international investment law. Both could limit the power of state sovereignty to exercise their exclusive rights over the particular types of biodiversity. In this way, Article 3 of the CBD ensures state ownership over its own biological resources becomes meaningless to protect its own exercise against neoliberal institutions. Whereas the South States did not increase any bargaining power over genetic trade as they expected, rather on the other hand, they suffered a loss in terms of their own resources and competence and control over them. The result could lead some parts of native species to the model of "extraterritorial enforcement"[905] of international intellectual property rights under Property and Trade Regimes.

In regard to the CBD direction, dominated by free-market environmentalism during the past decades, continuing in this mode is not in alignment with the core principle of ecological sustainability. So, the dialogue of neo-liberalism towards the Earth's biodiversity commons has been in a forward moving progression under the movement of the CBD. Taking into account the adoption of the Nagoya Protocol, the Strategic Plan for Biodiversity 2011–2020, and the Aichi Biodiversity Targets for 2015-2020 are linked to other relevant Property regimes, in particular, the Intergovernmental Committee on Intellectual Property and Genetic Resources, and Traditional Knowledge and Folklore of the World Intellectual Property Organization.[906]

Neo-liberalism has stipulated the cooperative international institutionalization of commodities.[907] Commodification monetizes the global biodiversity commons by increasing economic values to intrinsic values such as the green economic and the payment for ecosystem services. In the process of privatizing biodiversity it establishes the rights of the owner and ensures that such rights will be protected.[908] And State-based territorial bio-resources are open to access. As the CBD promotes tradeoffs for genetic

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[904] Joseph Straus "Biodiversity and Intellectual Property" in Toshiyuki Kono, Ronald A.Brand, Judge Avern Cohn, and others *(eds) Rethinking International Intellectual Property- Biodiversity & Developing Countries, Extraterritorial Enforcement, the Grace Period and Other Issues* (University of Washington School of law, 2000) at [141-166].
[905] Toshiyuki Kono, Ronald A.Brand, Judge Avern Cohn, and others *Rethinking International Intellectual Property- Biodiversity & Developing Countries, Extraterritorial Enforcement, the Grace Period and Other Issues* (University of Washington School of law, 2000).
[906] *Report of the Eleventh Meeting of the Conference of the Parties to the Convention on Biological Diversity* UNEP/CBD/COP/11/35 (2012).
[907] Sara Vadi, above 150, at [22-64].
[908] At 27.

trade, the rules are set to support the expansion of the operations of the trade.[909] The financial line of neoliberal biodiversity can be seen in terms of "public and private partnerships."[910] Trade cooperation from private companies of the North with the state agencies of the South underpin the CBD's negotiation as the main players associated with global biotechnology research. From the private sector, companies such as Monsanto and others or other donors to university research and national authority,[911] these key organizations rely on private property regimes to gain exclusive rights over the Earth's genetic biodiversity.

Whereas its side effect will lead to the unfinished conflicts in the debate of equality between social and economic sectors, conflicts of both sides directly harm environmental biodiversity, associating with international property rights regime could be the WRONG TURN of global biodiversity governance. Whilst a scholar argues that the property regime is not concerned with biodiversity protection and sustainable use or fair sharing, its main objective is to promote the enforcement towards a patentable system.[912] In this pattern, the radical forms of a global regime of intellectual property protection have potential impacts on the local users of genetic resources in terms of traditional foods and drugs. Private ownership of the lines of production represents the essence of international investment law and as such will be protected under the aegis of human rights.[913] Under links for poverty reduction contributing to biodiversity conservation, privatization will be deployed by the international finance organizations (the World Bank, IMF, or the ADB) in order to increase the growth of the free market on genetic trade.[914] TRIPs and WIPO may take the lead to secure the protection of patentable rights related to biodiversity. In the end of neo-liberals projects on biodiversity, it could be assumed that the set of IP regimes to TRIPs agreement will override the domestic *sui generis* system and deteriorate state sovereignty to regulate domestic law and policy against the powerful cooperate business.[915] At this point, the Group of Seven would become a gang of seven for global bio-piracy.

4.8.1 Global Genetic Diversity under 'Post-Fordism'

Bio-piracy represents globally controversial issues related to the Earth's genetic diversity and fair and just use of them under the perspective of anthropocentricism. From the Bio-piracy perspective, according to

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[909] Natalie P. Stoianoff (ed) *Accessing Biological Resources: Complying with the Convention on Biological Diversity* (Kluwer Law, London, 2004) at [33-52].
[910] Gurdev S. Khush "Biotechnology: Public-Private Partnerships and Intellectual Property Rights in the Context of Developing Countries" in McManis Charles (ed) *Biodiversity & the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (Earthscan, Sterling, 2007) at [179-191].
[911] At 181.
[912] Camena Guneratne *Genetic Resources, Equity and International Law* (Edward Elger, Cheltenham, 2012) at [127-154].
[913] Scott Prudham and William C. Coleman "Introduction: Property, Autonomy, Territory and Globalization in William D. Coleman (ed.) *Property, Territory, Globalization-Struggle over Autonomy* (UBC Press, Vancouver, 2011) at [11-29].
[914] Debra Steger "The Culture of the WTO: Why it Needs to Change" in William Davey and John Jackson (eds) *Future of International Economic Law* (Oxford University Press, Oxford, 2008) at 54.
[915] Guneratne *Genetic Resources*, *Equity and International Law,* above 912, at 136.

Mgbeoij Ikechi, the term bio-piracy refers to "activities related to access and use of genetic resources in contravention to national regimes based on the CBD."[916] It may be defined as "the unauthorized commercial use of biological resource and/or associated traditional knowledge, or the patenting of spurious inventions based on such knowledge, without compensation."[917] In the current debate, both sides have reliance on a claim of property rights over things or their knowledge that associates to human rights and state sovereignty over biological resources. Even now, as the Nagoya Protocol was passed, the conflicts on seed battle have not seemed to decline.[918]

Whilst it has been expected that genetic diversity has been marketed to biotechnological industries, benefits from selling genetic resources could have been distributed in a fair share to local community. This is even though it causes another problem shift over traditional plant breeding. Biotech businesses take advantage from the concomitant lack of threat assessments and vague definition of biodiversity conservation and use for biological resources as well as for the poverty elimination policy. Although biotechnology has been introduced to support in-situ and ex-situ conservation management, it did not present a good result for biodiversity protection. The classical instance can be learned from INBio-Merck in Costa Rica in 1995.[919] Studies show that although Costa Rica had gained income from agricultural biotechnology, the environmental impacts to native biodiversity were of a lesser concern.[920]

Moreover, agricultural biotechnology also raises the debate on food security. For those who are concerned regarding friendly environmental methods of plant breeding, they may choose to buy organic products. Conversely, those who do not have choices have to buy GM crops due to the monopolistic market of food industries. Therefore, such choice to choose their safe foods is limited. Diversity of crops also loses.[921] By definition, traditional plant breeding is based on the combination of character among plants that are sexually compatible from the same species.[922] Genetic engineering takes a short cut from ecological evolution by mixing genes from one species to another and reducing the obstacles of sexual compatibility.[923] No legal obligations from the biotechnological environmental impact are well regulated, in terms of the CBD. This issue raises several concerns related to food safety, loss of genetic diversity, unintended impacts from selected plant traits and GM crops incidentally released to nature.

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[916] Ikechi Mgbeoji *Global Bio-piracy: Patents, Plants, and Indigenous Knowledge* (UBC Press, Vancouver, 2006) at [12-13].
[917] At 12.
[918] Vadana Shiva *the Law of the Seed* (21 July 2014) <www.navdanya.org/attachments/lawofseed.pdf> .
[919] Rodrigo Gamez "The Link between Biodiversity and Sustainable Development: Lessons from INBio's Bioprospecting Programme in Costa Rica" in McManis Charles (ed.) in *Biodiversity & the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (Earthscan, Sterling, 2007) at [77-90].
[920] Ana Sittenfeld and Ana M.Espinoza "Costa Rica: Biodiversity and Biotechnology at the Crossroads" in McManis Charles (ed) *Biodiversity & the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (Earthscan, Sterling, 2007) at [168-172].
[921] Patricia L. Howard "Women and the Plant World: An Exploration" in Patricia L. Howard (ed) *Women & Plants: Gender Relations in Biodiversity Management & Conservation* (Zed Books, NewYork, 2003) at [32-33].
[922] George T. Tzotzos, Roger Hull and Graham P. Head *Genetically Modified Plants: Assessing Safety and Managing Risk* (Elsevier/Academic Press, Amsterdam, 2009).
[923] Barbara A. Schaal "Biodiversity, Biotechnology and the Environment" in McManis Charles (ed) *Biodiversity & the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (Earthscan, Sterling, 2007) at [137-147].

Scholars assert that the "tendency towards the domination of nature is continued in a new and even stronger form."[924] Ulrich Brand and his colleagues (2008) refer to this trend as the "regulation of nature in "Post-Fordism"[925] in other words, capitalizing of biodiversity or bio-capitalism. His argument points out that under neo-liberalism, the global networks of transnational companies can lead to the potential dissolution of the borders of the "national economies" over domestic markets.[926] This increases the independence of multinational corporations from the regulatory environments and social compromises of individual states.

Under this condition, it allows private capitalist companies to gain further advantage over domestic and global negotiation with respect to the issues of genetic trades. With such influences over local/state government and being protected by international investment protection and trade regimes, the foreign corporations have the capability to determine their own agenda and policy involved with domestic policy, particular in developing countries.[927] As a result, countries have declined their own sovereign power in exchange for foreign investment. There is no absolute sovereignty even though state government claims it. The dominance of powerful enterprises takes control of governmental policy, a topic addressed in several works by Vandana Shiva against Monsanto in India, raising the growing concern on ‘food security’ or ‘freedom of seed’ in traditionally agricultural biodiversity.[928]

As a result, commodification of biodiversity, especially plants genetic diversity, raises controversy between local/indigenous communities and foreign investments. In the era of today's free-trade globalization, the growing power of transnational cooperation and international finance has an influence in negotiation in terms of trade related biodiversity. In as much as state governments in many developing nations have no alternative choices to choose from, rather must adjust to environmental policies and regulations based on demands of foreign investments despite those who would be against its own citizen's will. Shiva argues that state governments and transnational companies are now working together (private-public relationships) to take genetic diversity out of the purview of local/indigenous peoples. Of concern is that the more commodification biodiversity by private domains increases, the more threats of cooperative monopoly in agricultural products could have a negative impact on the traditional daily lifestyle of local people. Hence, it has been argued that state governments are wary of protecting the foreign investor's interests, particular in developing countries. Within a high rate of corruption in such governmental authorities, the absolute sovereignty is used to protect private-public relationships rather than protecting the earth biodiversity or the welfare of citizens. Consequently, the thesis asks for alternative forms of governance in which all citizens can democratically participate in governing the

[924] Ulrich, Görg , Joachim, and Markus, above n 152, at 13.
[925] At 9.
[926] At 18.
[927] L. Howard *Women & Plants,* above n 921, at [32-33].
[928] Vandana Shiva *India Divided: Diversity and Democracy under Attack* (Seven Stories Press, NewYork, 2005).

Earth's biodiversity as part of the global commons. Meanwhile, Shiva has declared the "Declaration on Seed Freedom" in opposition to the patentable regime.[929]

In the end, it can be critiqued that the regime system is based on territorial sovereignty. So, rule and policy of those independent institutions depends only upon the COP decision that could be very convenient to compromise environmental protection in favor of the multinational companies. The regime fragmentation benefits those businesses in terms of lobbying and negotiation to enact domestic biodiversity law that supports their interests.

In terms of biological resource allocation matters, they are becoming more complicated. Governing the earth's biodiversity commons based on fragmented regimes is articulated in relation to a contractual notion which is basically concerned regarding economically mutual agreement among contractual parties, and operates by a group member. So, different economic bases among states (poor and rich) allow one state to dominate others in the way it proposes. The result does not support the spirit to protect and restore the integrity of the Earth community rather it supports individuals or group interests to gain benefits from the commons. The traditional doctrine of the pacta sunt servanda based on contractual notion is still lacking enforcement capabilities to place serious restrictions and strict limitations on State's parties actively involved in its own territorial biodiversity that reflects on our biosphere. Hence, it is crucial to look for alternative measures to protect global biodiversity.

4.9 The Right Turn of the Rio Convention: Global Governance Revisited

In contrast to the Group of Seven wherein it is based on neo-liberalism and property regimes, Global governance (GG) should be revisited. Beyond state cooperation based on economic interests, GG focuses on environmental assistance. States agree to work together based on global ethics (the Earth Charter) to protect the earth commons. Although the CBD has so far also sought joint cooperative governance to the 1992 UNFCC, and the 1996 UNCCD known as "the Joint Liaison Group (JLG)" for the bigger protection,[930] in this direction, the attempt of the Group of the Rio Convention found difficulty and obstacles. According to the JLG report, it found non-connection among the Climate Change, Biodiversity, and Dissertation Conventions. It pointed out that the disconnection of three regimes occurs because they have different aims/objectives or they have little in common aims and lack of overlapping in the wording of the Conventions.[931] As discussed throughout the thesis, the environmental reductionists do not seem to

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[929] Vandana Shiva *Seed Freedom* (2 March 2015) <http://seedfreedom.in/declaration/>.
[930] Karen N.Scott "Managing Fragmentation Through Govenance: International Environmental Law in a Globalized World" in Andrew Byrnes, Mika Hayashi, and Christopher Michaelsen (eds) *International Law in the New Age of Globalization* (Martinus Nijhoff, Leiden, 2013) at [207-238].
[931] *Report of the Meeting of the Joint Liaison Group of the Convention on Biological Diversity, the United Nations Convention to Combat Desertification, and the United Nations Framework Convention on Climate Change VII. analysis of the requests to the JLG from each convention process and discussion on how the JLG can be positioned to respond to the different expectations under each convention* at paragraph 11 (14 May 2009) <https://unfccc.int/files/cooperation_and_support/cooperation_with_international_organizations/application/pdf/jlg-09-report-en.pdf>.

agree on the earth interdependence and the ecological connectivity. They have still focused on conserving only the selected biodiversity. Therefore, even though revisiting GG is the RIGHT TURN of the CBD, it does not seem acceptable and easily denies without properly analysis and rethinking of the fundamental principles (the ecological sustainability) that serve as the basis for their creation.

Here is what the study has been investigating. It was after the 1972 Stockholm declaration and the 1987 Brundtland report was published. At the beginning, GG had emerged as idealistic after the end of the Cold War in 1989. With the belief in world interdependence, several heads of the UN commission joined at the meeting to draw a new global picture and one of them was Gro Harlem Brundtland, the former Norwegian Minister for Environmental Affairs, who established and chaired the World Commission on Environment and Development (WCED).[932] Two years later, this ideal became a realistic process in the Common Responsibility in the 1990's; Stockholm Initiative on Global Security and Governance published by Sweden Prime Minister's Office in 1991.[933]

Under the theme of "human responsibility" to Earth based on the common heritage of humankind and strong sustainable development, the concept of the GG for Human and Environment (GGHE) had been put to the real test between the South and North debate at the 1992 Rio conference. Even so, by this time the GG was very silent in regard to the concept of sustainable development. Indeed, if the completed set of the GGHE had gone through as the agenda setting process, it would have consisted of the UNFCCC, UNCCD, CBD, international forests law, Agenda 21, and the first version of the Earth Charter.[934] Nevertheless, the Earth Charter was shortly withdrawn before the Conference was started because of religious concerns. All four of the climate, land, biodiversity, and forest documents had been set forth to become the legal-binding agreements. Although three of them were accepted however the global forests law was denied. Agenda 21 had proceeded throughout the process as a voluntary guideline depending on the nation states to adopt. Common responsibility was turned to the common concern and the common but differentiated responsibility. As previously discussed the radical Southern position considered state sovereignty under property doctrines as a prerequisite for its own biodiversity protection. In contrast to the North, the concept of GG is viewed as an example of the European Union (EU) until today. As a result, since then it seemed to be the end of the GGHE in the Global South.

In fact, it has been suggested that international regime can be governed in terms of governance system. Governance (the Greek's root, *kybernetes*) can be understood as "the establishment and operation of a set of rules of conduct that define practices, assign roles, and guide interaction so as to grapple with collective problems."[935] In 1994, the report of the Commission on Global Governance: Our Global

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[932] The Commission on Global Governance *Our Global Neighbourhood* (Oxford University Press, Oxford, 1995) at xv.
[933] Ulrich Beyerlin and Thilo Marauhn *International Environmental Law* (Hart, Oxford, 2011).
[934] The Commission on Global Governance *Our Global Neighbourhood*, above n 932 at [216-217].
[935] Olav Schram Stokke "Regimes as Governance System" in Oran R. Young (ed.) *Global Governance: Drawing Insights from the Environmental Experience* (the MIT Press, Mass, 1997) at 28.

Neighbourhood was published. The term GG as defined by the Commission on Global Governance is as follows;

> "[t]he sum of the many ways individuals and institutions, public and private, manage their common affairs.... It includes formal institutions and regimes empowered to enforce compliance as well as informal arrangements that people and institutions either have agreed to or perceive to be in their interest."[936]

The report further suggested at the global level that global governance is not only limited to nation states or intergovernmental organizations, it also includes NGOs, citizens' movements, multinational corporations, the global capital market and the global mass media interaction.[937] However, although the concept of GG was eclipsed by neo-liberalism since 1992, according to the 1994 report GG provided several great ideas related to the protection of the Earth's biodiversity commons including neighborhood values[938], a global civil ethic,[939] trusteeship of the global commons,[940] and global civil society.[941] Therefore, rethinking of some of the merits of GG for global environment governance could be an alternative.

4.9.1 Transformative Aspects of Global Governance for Sustainability

In more contemporary times, because of the effect of fragmentation and multilateral legal system, it has been a challenge for international environmental law to re-establish its own "agreed goal."[942] In other words, constituting fundamental norms can bring the coherence and unity in 'bio-environmental' law and governance. By the lack or omission of the pursuance of ecological sustainability, each of the 'bio-environmental' treaties is governed by a group of members that has its own objectives, narrow interests, and limited obligations.[943] The commentators recommended a theory of "transformative aspects of global governance for sustainability[944] which is an eco-centric perspective of the paradigm-shifting development towards sustainable communities guiding via a strong commitment of ecological ethics. This conceptual framework is the theoretical framework of the thesis that seeks to coordinate collective performance between multi-participants on a basis of a set of just and normative rules regarding the earth biodiversity protection.

The governance for sustainability focuses on the quality of intrinsic values of natural environment as a central point. The paradigm shift was suggested from anthropocentric to eco-centric, so ecological integrity will become a core principle to the global environmental protection. In this theory, the voice of

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[936] The Commission on Global Governance, above n 932, at 2.
[937] At 3.
[938] At [48-54].
[939] At [55-65].
[940] At [251-252].
[941] At [253-260].
[942] E. Rakhyum and Bosselmann, above 752, at [285-309].
[943] Martti Koskenniemi "The Fate of Public International Law: Between Technique and Politics" (2007*) Modern Law Review,* Vol.70, at [1-30], 23.
[944] Bosselmann, Engel, and Taylor, above 126,at 3, [175-177].

each and every one of the individuals, those who live on planet earth (the ecological citizens),[945] could have participated in the process of governance for sustainability without any political obstacle. The theory shifts away from state-centric and public domains to the earth-centric by involving a wider range of non-state actors such as global civil societies, NGOs as well as business sectors.

Its instance can be seen in the Great Lakes ecosystem governance between the United States and Canada.[946] Two legal agreements, the Boundary Waters Treaty of 1909 and the Great Lake water Quality Agreement of 1972 and its amendments in 1978, 1983, 1987 and 2012, are a core of the governance.[947] As discussed in the previous Chapter, there are several reasons that experts have described how achievement of institutional operation and legal enforcement leads to deterioration due to phosphorus loading to the Lakes.[948] Both Northern nation states have taken a serious commitment of ecological integrity and sustainability as their agreed goal to limit domestic utilization or activities that could have an impact on the water quality of the Lakes in this case. Scholars point out that the ecosystem approach focuses on the water in the Lakes, as well as throughout the entire catchment system beyond the political boundary. Those include agricultural and urban development, and human health.[949] However, it is important to note that the United States did not take the same approach to address the water allocation at the Southern part of its territory with Mexico in the case of the International River (the Rio Grande).[950] Therefore, if the ecosystem governance will be effective in practice, it can be argued that the approach should depend on the capacity of state parties to implement it properly. And also, agreed upon goals must be dedicated towards ecological integrity and sustainability as a core concern, rather than economic and social development. With respect to global biodiversity governance, Earth is one, yet consists of biodiversity. The fragmented ecosystems as a value-laden hierarchy have led to a single role that sustains the Earth's life supporting system. Although the Biodiversity Convention and other related treaties have already existed, these fragmented legal systems are still lacking a hierarchical role to pursue.[951] As discussed, the fundamental principle in terms of the ecological integrity of sustainability has been dominated by neo-liberalism. Thus, reclaiming the ecological integrity of sustainability as hierarchical principle is necessary to solve the fragmented issues that separate ‘bio-environmental’ treaties regimes.

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[945] At [42-44].

[946] Marcia Valiante, Paul Muldoon, and Lee Botts "Ecosystem Governance: Lessons from the Great Lakes" in Oran R. Young (ed.) *Global Governance: Drawing Insights form the Environmental Experience* (the MIT Press, Mass, 1997) at [197-225].

[947] Agreement on Great Lakes Water Quality, Canada-United States of America 837 UNTS 11982 (signed 15/04/1972, entered into force 15/04/1972).

[948] Valiante, Muldoon, and Botts "Ecosystem Governance" above n 754, at [204-205].

[949] At 204.

[950] McCaffrey, above n 198.

[951] Klaus Bosselmann "The Rule of Law Grounded in the Earth: Ecological Integrity as a *Grundnorm*" in Laura Westra and Mirian Vilela (eds) *The Earth Charter, Ecological Integrity and Social Movements* (Earthscan from Routledge, NewYork, 2014) at [3-11].

4.9.2 Sustainability as the Fundamental *Grundnorm*

Because international law is viewed as a legal system, those individual treaties must synchronize, conform and comply. In order to avoid fragmented problems, Bosselmann suggests that the international 'bio-environmental' legal system should accept the principle of sustainability as a fundamental norm (a *grundnorm*). Here the ideal destination of global governance for sustainability is to reach ecological integrity (EI) at both the local and global level. As mentioned in the previous chapter, the notion of EI has been recognized in both international law and domestic law.[952] Moreover, it must be realized that the most significant part of EI reflects support of environmental protection, and human rights. Living in a healthy environment is one of the key concerns of human rights. However, in some way, humankind has placed their rights as the highest priority beyond ecological limits.[953] By increasing the stronger degree of ecological definition in human rights, it captures the ecological obligations to the human sphere. Looking after, respecting and taking good care of the Earth's physical biodiversity, and avoiding pollution by re-prioritizing is confirmed by the notion of "ecological human rights".[954] Thus, EI is worth qualifying as fundamental *grundnorm* in order to provide a check and balance between human rights of individuals and the commonweal of Earth.

4.9.3 The Rio+20: Calling for the Holistic and Integrated Approach

Clearly, the efforts of the previous forty years of the governance in relation to sustainable development have not succeeded.[955] In 2012, the reformation of existing international law and governance of global environment is urgently called for by the Rio+20 Conference, having a signal for establishing institutions and governance systems, guiding and supporting the protection and sustainable management of biodiversity and ecosystems.[956] At this point, global governance for (environmental/ecological) sustainability has at least a chance in a real existence.[957] Robinson remarked that fundamental *grundnorms* of environmental protection should not be discarded based on a Principle of Non-Regression.[958] Norms which once were established for protecting global environment for all humanity cannot be discarded to favor individual interests. Thus, such norms must be carried on in process until reaching the accomplishment.[959]

The implementation of norms is necessary.. The Rio+20 is available for global discussion with respect to the World Environmental Constitution ("WEC") and the World Environmental Organization ("WEO") that

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[952] At 9.
[953] Bosselmann, above n 284 at [116-129].
[954] At 132.
[955] Worldwatch Insitute *State of the World 2014: Governing for Sustainability* (Island Press, Washington ,2014); and Frank Biermann, Kenneth Abbott and others "Transforming Governance and Institutions for Global Sustainability: Key Insights from the Earth System Governance Project" (2012) 4 *Current Opinion in Environmental Sustainability* 1, at [51-60].
[956] Stephen J. Turner *A Global Environmental Right* (Earthscan, Abingdon, 2014) at [25-34].
[957] Nicholas A. Robinson "Reflecting on Measured Deliberations" (2012) 42 *Envtl. L. & Pol'y* 219 at 219.
[958] At 223.
[959] At 224.

would become the possible institutions.[960] However in terms of global governance and law of environmental sustainability, it should be noted that if three aspects of sustainable development are administered by institutions related to state authority alone, the environmental pillar could be considered as the weakest part. Currently, the UNEP does not have any authority of its own compared to other organizations. The social aspect has been protected by the 1948 Universal Declaration of Human Rights (UDHR), the International Covenant on Civil and Political Rights (1966) and the International Covenant on Economic, Social and Cultural Rights (1976) based on the United Nations Covenants on Human Rights, 1966. Furthermore, human labor is also protected by the Constitution of the International Labour organization (ILO).[961] Economic and trade development are strongly protected by the WTO and the World Bank. So it is hardly expected that by empowering the WEO, a balance in relation to the socio-economic influences could be achieved.

Regarding the holistic and integrated approach, the role of eco-centric covenants is clearly seen in the Rio+20 Declaration. Although it mostly is concerned with renewable political and legal commitments from the beginning era until the current, there is a new movement, appearing in the conference outcome. It is a dawn of the term "Mother Earth" referring to "the planet Earth and its ecosystem" and "the rights of nature," which is directed to Earth by stating that:

> "We recognize that planet Earth and its ecosystems are our home and that 'Mother Earth' is a common expression in a number of countries and regions, and we note that some countries recognize 'the rights of nature' in the context of the promotion of sustainable development. We are convinced that in order to achieve a just balance among the economic, social and environmental needs of present and future generations, it is necessary to promote harmony with nature."[962]

And again, the term "to live harmony with nature" and "the health and integrity of the Earth's ecosystem" are have achieved international recognition.

> "We call for holistic and integrated approaches to sustainable development that will guide humanity to live in harmony with nature and lead to efforts to restore the health and integrity of the Earth's ecosystem."[963]

The Rio+20 Declaration also acknowledges the natural and cultural diversity of the world and recognizes that all cultures and civilizations can contribute to sustainable development.[964] Throughout the report, biodiversity represents a huge movement embedded in the statement. The initial concept of Mother Earth creates an interconnection between biodiversity and Earth together and based on our cultural rights and indigenous rights, the belief system in relation to Mother Earth guides us to our duty of human guardianship in terms of our natural world. Although the variety of defining biodiversity such as ecosystems, species, natural resources, genetic resources, planet, climate, ocean/sea and 'the natural

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[960] Sustainable Development Knowledge Platform "World Environmental Constituion: A tool for urgent transformation" (2 March 2013) <http://uncsd2012.org> .
[961] Rodgers Gerry, Lee Eddy, Swepston Lee, and Daele Van Jasmien *The International Labour Organization and the quest for social justice* (ILR Press, 2009), at 7.
[962] *The Future We Want* UN A/CONF.216/L.1 (2012) at 39.
[963] At 40.
[964] At 41.

ecological processes' are each mentioned, they are divided in sub-sections in appropriate recognition throughout the text. Although the text did not specifically mention the term 'biosphere', the Earth's life support system is implied in the connection of biological functions and human ecosystem as asserted in paragraph 111.

> "We reaffirm the necessity to promote, enhance and support more sustainable agriculture, including crops, livestock, forestry, fisheries and aquaculture, that improves food security, eradicates hunger and is economically viable, while conserving land, water, plant and animal genetic resources, biodiversity and ecosystems and enhancing resilience to climate change and natural disasters. We also recognize the need to maintain natural ecological processes that support food production systems."[965]

Biodiversity in the sense of source of sustainable development is also recognized in a concern of over-exploitation as stated that "urgent action on unsustainable patterns of production and consumption where they occur remains fundamental in addressing environmental sustainability, and promoting conservation and sustainable use of biodiversity and ecosystems, regeneration of natural resources, and the promotion of sustained, inclusive and equitable global growth."[966] Natural resources and endangered species are still highly considered.

Even so, the old habits of thought cannot change so quickly. The Rio+20's tendency has still relied on a traditional wildlife trading system, which emphasizes increasing the number of individual species. Clearly, the curial role of CITES is reaffirmed emphasizing that "an international agreement that stands at the intersection between trade, environment and development; promotes the conservation and sustainable use of biodiversity; should contribute to tangible benefits for local people; and ensures that no species entering into international trade is threatened with extinction."[967] Although the UN has started recognizing the holistic paradigm for living harmoniously with nature such as *Harmony with Nature*[968] and MDGs on environmental sustainability, the anthropocentric worldview remained strongly throughout the global community.[969] Nevertheless, the new concept of the holistic and integrated approach may open an opportunity to an eco-centric worldview considering the Rights of Nature and our Mother Earth as a core theme.

Both firmly stand on behalf of the planet Earth in terms of physical insights as a claim for her 'ecological justice' towards the variety of all life forms in balance between the demands of humanity and the Earth's renewable capacity.[970] Although the welfare of our ecosystem has sustained our human community for centuries as a result of the evolutionary process, providing *Homo sapiens* with greatly adaptive capacities, yet we have not ever been able to control nature. Therefore, the sound standard of living in

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[965] At 111.
[966] At 61.
[967] At 203.
[968] *Sustainable Development: Harmony with Nature* UNGA A/65/314 (2010).
[969] Laura Westra "Life, Health, and the Environment: The Denied Connection" in Laura Westra, Colin L. Soskolne and Donald W. Spady (eds) *Human Health and Ecological Integrity* (Earthscan, NY, 2012) at 9.
[970] Klaus Bosselmann "Ecological Justice and Law" in Benjamin J. Richardson and Stepan Wood (eds) *Environmental Law for Sustainability* (Hart, Oxford, 2006) at 131, [150-151].

harmony with Nature has never been separated to living sustainably in a non-human world. The evidence is obviously seen in many local/indigenous communities in which they have set a priority (a high respectfulness) to nature above humans. In regard to cultural perspectives, the idea of natural protection is implied in the moral code or religious rules.[971]

Ecologically spiritual practices are reminiscent of the existence of nature. Sustainability becomes the wisdom of the community. By holding these ecological wisdoms as a commitment some local communities have maintained their livelihood with natural fertilities for centuries. Hence communities are enabled to pass on their natural heritage from generation to generation without upsetting or having upset Mother Nature under the form of culture and tradition. For modern society, learning to live with nature in relation to traditional practices can be reconciled to law and governance. And for secular people who may not believe in Mother Earth or Sacred Nature, it would make more sense, speaking in terms of legal rights that must be protected by law such as animal rights and welfare regulations. Whilst with the holistic and integrated approach, we could set the Rights of Mother Earth as the highest priority, based on the rational insights of an ecological framework that could strike a balance between ideality and reality. As a result, it could increase a change to a just and equitable standard of living harmoniously with nature.

If the sound standard of living refers to the way to live in harmony with natural ecological sustainability, the success of SD must extend eco-centrism to the Earth community. An eco-centric philosophy offers us a solution whilst the serious situation becomes a “dilemma of choices” between human’s pursuit of happiness and wellbeing and biological resource constraints. For example, if we stand on an anthropocentric framework, mega-projects such as building large dams must be important to construct based on human interests, focusing on a particular economic and social purpose. And whereas the decision becomes final, our democratic system will always vote for pleasing human interests such as increasing jobs, and household income whilst ecological sustainability would be rejected. Lack of understanding of the 'right of nature' could signify that ecological concerns are not matters for sustainability, leading to conflicts among individual rights and communal rights in environmental issues (further details in the next Chapter). Nevertheless, if "right of nature" is protected by constitution law, (as seen in constitution of Bolivia and Ecuador) the balance between all groups of humans and the interests of nature will stand on equality and justice. In the short term of human adaptation to nature, anthropocentrism presents happiness and wellbeing via utilitarianism, so transforming Earth's landscape offers a better livelihood. On the other hand, eco-centrism argues that humans are deeply interconnected and dependent on nature. This approach states that the Earth’s resources is a community of subjects in itself and is not a collection of objects.[972] At this point, society could and should change its needs by

[971] David R. Kinsley *Ecology and Religion: Ecological Spirituality in Cross-Cultural Perspective* (Prentice-Hall, Engelwood Cliffs, 1995).
[972] Burdon, above n 137, at [132-133]; and Peter D. Burdon *Earth Jurisprudence: Private Property and the Environment* (Routledge, Abingdon, 2015).

taking Earth in to account, via expressing it in law and policy. In the long run, society will be living in an environment of sustainability.

4.10 Conclusion

Fragmentation in global environmental governance allows neoliberal projects to weaken the legal system. It changes the intrinsic values of biodiversity into mere resources to use and consume for certain individual people's interests. Neoliberal biodiversity currently becomes a part of cultural violence to the Earth's system, in particular with biotechnological environmental impacts. This new structure of liberalism monopolizes the earth's biodiversity commons in favor of particular individual groups, and in addition, the biotechnological practices alter the native species and its ecosystem. By empowering the market and privatizing biodiversity to alleviate poverty does not signify protecting the ecological integrity of biodiversity; even so it is disadvantageous regardless of social and ecological justice. Neoliberal biodiversity does not equate to strong sustainability rather it takes away the opportunity for ecological integrity hence weakens and decreases the ecological sustainability. The fact that several local governments have failed to put in place adequate environmental controls over GM crops reflects in the traditional practices of local and indigenous communities. This can be a problem whereby monopolistic concessions are allowed to corporations linking to the global commons that subject local communities to excessive charges for access for their basic needs. The correct move is to revisit the global governance for sustainability.

PART II: TRANSFORMATIVE ASPECTS OF GLOBAL GOVERNANCE FOR SUSTAINABILITY

CHAPTER 5: THE EARTH COMMONS AND THE COVENANTAL APPROACH

5.1 Introduction

In the 2012 Rio+20 Conference, there were a growing number and a variety of participants involved in the global movement on sustainable development such as nation states, the public/private observers, non-governmental organizations (NGOs), and similar civil society groupings.[973] It is clear to point out that the negative consequences of today's ecological crisis such as climate change and biodiversity depletion impact all levels of society around the human world. However, there was an attempt to move away from collective commitments to voluntary actions, so the UN calls for reaffirming the political commitment to ensure the concrete actions that drive state's performance of sustainable development commitments forward.[974] While the governments struggled to reaffirm their commitments, numerous participants called for “a new contract"[975] or "a new covenant"[976] that should open and be available to enable multi-partnerships to work together. For this particular reason, resolving global environmental harms requires more than a mere contract treaty without ongoing and regular action. And global participation requires a covenant agreement linking different participants to performance based on the same fundamental principles. However, the limit of the international agreement system only accepts a nation/state or international organization to join the treaty. The problem is that this pact of nation states limits the global communities within the obedience of the governments although the global environmental harms are global problem. In fact, while protecting the earth commons necessitates global participation, whereas the act of state's non-performance has the potential to cause damage to the whole community.

In this chapter, the thesis investigates the new kinds of bond that could join all multi-partnerships under the same fundamental principle. This chapter distinguishes the three slightly different characteristics of commitment---contract, compact, and covenant---that are used interchangeably in international law and politics in order to find out which one might be appropriate for governing the earth’s biodiversity commons. Beyond the modern social contract, the thesis traces the jurisprudential root, historical and legal philosophy that undermines the *pacta sunt servanda,* the promise-must-be-kept, to search for the origin of solemn promises. In the balance between rights and obligations beyond the treaty, covenant notion is the most essential social instrument by which absolute sovereign rights will be diluted, and in contrast universal responsibility will be more intense. The key point of this Chapter suggests the covenant approach will be an alternative choice to unite altogether under the ecological sound principles.

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[973] Kanninen, *Crisis of Global Sustainability,* above n 269, at [66-67].
[974] *Report of the United Nations Conference on Sustainable Development* UN A/CONF.216/16 (2012) at [3-4].
[975] Kanninen, above n 269, at 154.
[976] Ronald J. Engel "the Earth Charter as a New Covenant for Democracy" in Klaus Bosselmann and Ronald J. Engel (eds) *The Earth Charter: A Framework for Global Governance* (KIT Publishers, Amsterdam, 2010) at [29-40].

5.2 The Modern Social Contract in the Tension of the Global Community

The lack of a proper legal instrument to hold such political commitment can cause significant failure for the stakeholders to perform and follow through on the commitments they have already made. It should not be surprising that since the 1972 Stockholm Declaration there have been multiple commitments whether in a form of soft law or hard law emerging for protecting the global biodiversity. Yet, many of them ended up in a position of non-performance or the less effectiveness compared with the rate of biodiversity loss. The problem of making a commitment without taking appropriate action can no longer be acceptable. This is because the biodiversity loss is now a global problem so it requires humanity as a whole to participate and be responsible in a sustainable manner.

The global community refers to various NGOs and civil societies involved in the process of global decision-making advocating for the sustainable development movement. For today's globalization, these groups play a significant role to drive forwards beyond the routine activity of governments related to biodiversity protection through the proactive movement of public support for the UN projects and policies.[977] Unfortunately, even though their performance can get around or behind the success of international agreement, it cannot be a part of the treaty contract. At this point, the UN system remains limited.

Thus far, the existing Convention related biodiversity have been constructed on the basis of private contract, focusing on state-property protection and mutual profits from the global commons. The position of earth's biodiversity in contract agreement becomes commodity or property of the state owners. Contract allocates rights and duties to state parties based on their free will in respect of unrestricted liberty. Among state parties, each individual obtains an equality of sovereign power to seek their own interests. This equality of power does not share to the *Mother Earth* herself and other groups. An observation has been made that modern social contract placed reasonable humans (it is now a group of state) in a position of the master of non-human species and nature.[978] Therefore, other indigenous groups or non-humans that existed outside the social contract were considered an object of the human domain and did not receive any protection because they are out of contract.[979] In this existing biodiversity regime, although state has benefits from biodiversity, it bears less environmental obligations to the global community. Hence, the private contract is not appropriate for governing the earth commons.

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[977] Barbara Gemmill and Abimbola Bamidele-Izu "The Role of NGOs and Civil Society in Global Environmental Governance" in Daniel C. Esty and Maria H. Ivanova (eds) *Global Environmental Governance: Options& Opportunities* (New Haven, CT, Yale Center for Environmental Law & Policy, 2002).
[978] La Barbera, above n 273, at 38.
[979] At 39.

5.3 Does Covenant Notion Exist in the Legal Contexts?

The new agreement to take mutual restraint of the Commons needs responsibility rather than exclusive rights. In order to achieve results, global governance for sustainability requires a stronger commitment of all participants. So, it is important to the historical background of notion of promise in international law. Generally, nation states or international organizations are the key actors under The Vienna Convention on the Law of Treaties, 1980. So, they alone become a subject of the contract agreement. Speaking of International relations between the State/Nations or an assembly between states, is believed to have been created in the context of "the state of nature" under the social contract theory.[980] This pact of nation states was built by fear of the uncertainty in the state of nature (war or natural disasters), so independent state/nations associate and made a pact to protect its own group of interests. And to ensure state's commitment shall be respected hence the *pacta sunt servanda* was used to secure social/political commitment since ancient times.[981]

Contract, compact, and covenant (or charter in a sense of positivism[982]) derive from their original source. This is a promise. In international law, state commitments are customarily kept in a form of international agreement, which are referred to via a variety of names such as "convention," "treaty," "agreement," "chapter," "final act," "pact," accord," "covenant," "protocol," or "constitution."[983]

In general, although everyone can create a bond by words with others, how to perform or keep the promise is another different matter. Those titles mentioned above are commitment instruments that have been created to overcome the distrust. Promises as contracts may guarantee legal enforcement and this concept has been thoroughly discussed all over contract law[984] and international private law.[985] However, they may not assure quality of performance beyond the letter of contract.

Although promises as covenants, oaths and vows are very rare in international law, particularly international environmental law, it does not mean covenant doctrine has disappeared from the international arena.[986] It is important to note that whilst human dignity and human rights are recognized in

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[980] Nuri A. Yurdusev "Thomas Hobbes and International Relations: form Realism to Rationalism" (2006) 2 *Australian Journal of International Affairs* 60, at [305-321].
[981] Oliver Dörr and Kirsten Schmalenbach (eds) *Vienna Convention on the Law of Treaties: A Commentary* (Berlin Springer Verlag, 2011) at [429-430].
[982] Hans Kelsen "The Prue Theory of Law Part I and II" in Jeffery A. Brauch (ed) *A Higher Law: Reading on the Influence of Christian Thought in Anglo-American Law* (2nd ed., William S. Hein & Co., Inc., Buffalo, 2008) at [129-153].
[983] UNEP "Auditing the Implementation of Multilateral Environmental Agreements (MEAs): A Primer for Auditors" (12 May 2013) DELC <www.unep.org/delc/Portals/119/audingmeas.pdf>.
[984] Martin Hogg *Promises and Contract Law* (Cambridge University Press, Cambridge, 2011).
[985] Vamvoukos Athanassios *Termination of Treaties in International Law: the Doctrine of Rebus Sic Stantibus and Desuetude* (Clarendon Press, Oxford Oxfordshire, 1985).
[986] The 1948 Universal Declaration of Human Rights, agreement relating to a United Nations seminar on the realization of economic and social rights contained in the Universal Declaration of Human Rights, Poland-United Nations ex officio UNTS 8547 (entered into force 20 February 1967); and the 1966 International Covenants on

a format of declaration and covenant,[987] they are not in a contract. Why is that? If a certain promise to protect human rights is treated in as much as an oath, why do they need to be enforced by international law? Does it mean that human rights are lacking legal force? In return, a violation of human rights reflects *jus cogens*, so is considered as *erga omnes* obligation. Or, since solemn promises as covenant could be so unique and powerful, they are preserved in use only for a particular issue, and this does not mean covenantal doctrine disappears.

It is suggested that covenantal instrument is used for particular universal issues instead of the general contractual agreement. With a covenant, it is much more comprehensive than a classical contract in the areas that require moral/ethical force as much as a legal one. Bosselmann points that covenant has been used in various unilateral or multilateral agreements. The function of international covenant focuses on the idea that "one party's non-performance does not affect the other party's duty to perform."[988] Unlike contract, "a covenant is a mutual promise of two (or more) parties that is valid independently of whether the parties deliver on their promise or not."[989] Bosselmann further suggests that covenants as agreement constitute legal rights and duties encouraging parties to fulfill agreement's achievement beyond the text of document.[990] More specifically, the existence of codified covenantal agreement emphasizes a global consensus regarding international integrity. For example, the International Bill of Human Rights limits the power of states to engage in violence towards its own citizens and others. Explicitly, covenantal agreement has set such rights and duties based on moral force, covenants. As can be seen that the modern scholar attempts to incorporate the notion of covenant and human rights to claim for a new "Covenant of Environmental Rights."[991]

5.4 Contract, Compact, or Covenant: What are Different?

According to Daniel Judah Elazar, the three of them come from the same root, but contract and compact are lately developed from the covenantal religion's root in different ways.[992] In modern society, they have been used interchangeably with a few explanations. For Elazar, covenant refers to "a binding and solemn agreement" established by two or more parties which involves mutual responsibilities.

> "covenant is a morally informed agreement or pact based on voluntary consent and mutual oaths or premises, witnessed by the relevant higher authority, between peoples or parties having independent though not necessarily equal status, that provides for joint action or obligation to

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Economic, Social, and Cultural Rights 993 UNTS 14531 (entered into force 3 January 1976); and the 1966 International Covenant on Civil and Political Rights and the Optional Protocol to the International Covenant on Civil and Political Rights 999, 1057 UNTS 14668 (entered into force 23 March 1976); and the 1988 Hamas Covenant: the Covenant of Islamic Resistance Movement (16 September 2014) the Avalon Project, Documents in Law and Diplomacy at Yale Law School Lillian Goldman Law Library, <http://avalon.law.yale.edu/subject_menus/major.asp.>

[987] Micheline R. Ishay *The History of Human Rights* (University of California Press, Berkeley, 2004).

[988] Bosselmann, Engel, and Taylor, above 126, at [49-52].

[989] At 50.

[990] At 51.

[991] Leib, above n 211, at [154-155].

[992] Elazar, above 307, at [7-8].

> achieve defined ends (limited or comprehensive) under conditions of mutual respect which protect the individual integrities of all the parties to it."[993]

In regard to Elazar's definition, every covenant involves consent, promise, and agreement.[994] So, it can be seen that covenant captures legal context and moral forces in both secular and religious senses. It is suggested that characteristic of covenants and compacts are broadly reciprocal.[995] Both consist of constitutional or public rather than contracts that are private secularism. Contract based agreements form a contractual party for the satisfaction or guarantee of mutual interests that tend to be minimal, short term, and presumptive of little or no community bonding. As it relates to neo-liberalism, nation state enters into the contract agreement to protect their interests. They are held together by mutual self-interest to protect their own property, rather than by community interest(s) to shared values of the common goods. Therefore, contract cannot hold agreement in trust in particular to protect the common values. It is clear in Elazar's explanation that rather than right-based contract, reciprocal obligations of covenant and compact are bound by one or other in response to one another beyond the communication of law.

Apart from contract, covenant and compact can unite individuals with common allegiance to shared values or norms in a commitment to the long-term integrity of the global community. Both doctrines focus on community in its entirety, and point to the basic assumption of obligations to each other to perform and to adhere to shared-values. However, it is most important to notice that a covenant also differs from a compact in agreement. According to Elazar, that is because the morally binding aspect of the covenant takes priority over its legal part.[996] Elazar strongly suggests that "in its heart of hearts, a covenant is an agreement in which a transcendent moral force, traditionally God, is a party, usually a direct party, to or guarantor of a particular relationship and whilst the term compact is used, a moral force is only indirectly involved."[997] Thus, a compact consists of virtuous dimension based on mutual pledges among parties regardless of the guarantee of the higher authority, but grounds onto legal aspects linking to policies.[998] For example, Rawls's theory of justice draws a secular goodness (trustfulness) that is based on either legal reason or rationales. So the compact can lead those who believes in a faith of compact to join an agreement constituted by trust between members of community.[999] Hence, the compact limits its own virtuous obligations to secular or economic sphere. On the other hands, for those who trust in the highest Holy's authority (traditional covenant), they may argue in terms of the 'dictates of reason.'[1000] This is because human's decisions are often attached to their own passion based on their creative reasons that

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[993] Daniel J. Elazar *Covenant and Civil Society: The Constitutional Matrix of Modern Democracy, The Covenant Tradition in Political Volume IV* (Transaction Publishers, New Brunswick,1998) at [8-10].
[994] At 8.
[995] Gismondi, above n 61, at [30-31].
[996] At 30.
[997] Elazar, above n 921, at 9.
[998] At 9.
[999] John Rawls *A Theory of Justice* (the Belknap Press of Harvard University Press, 1971) at 112, 347.
[1000] David Gauthier "Why Ought One Obey God? Reflections on Hobbes and Locke" in Christopher W. Morris (ed.) in *The Social Contract Theorists: Critical Essays on Hobbes, Locke, and Rousseau* (Rowman & Littlefield, 1999) at 79-80.

in some way could cloud their judgment.[1001] For example, fear of receiving punishment could result in a violation of the agreement. In current years, the compact notion has been used by the United Nations to promote the UN Global Compact.[1002] In this project, the UN attempts to get the private sectors (the global market enterprises) to cooperate with the UN missions. The Ten Principles of the UN Global Compact is set forth to uphold the compact agreement.

In sum, these legal tools have different roles to play. The contract excludes ethics and concentrates on secularism (economic), private dimension, and self-preservation. Speaking of the compact, it is also a secular version, covering a morality based legal/rationale dimension, and is limited to human perspectives and points of view whilst the covenant captures secular and religious doctrines.

5.4.1 Potentiality of Enforcement of Promise based Covenant as Moral Duty

A general skeptic of covenant agreement would be a capacity of enforcement. It is important to accept that because the international community cannot currently agree to establish the supreme authority over and above the independent states, all nation states must rely on their own commitment to perform their international duties. Even regarding the contractual treaty or customary international law, they could not guarantee legal enforcement. Thus, the absence of binding constraints is an open question. Hence how covenant as agreement can legitimately be enforced remains our core investigation here.

Historically before humans had literacy ability, they had already made a promise as a starting point to connect one person to another one person.[1003] Nevertheless, the term promise contains several meanings. Aristotle (*Nicomachean Ethics*, at 1127a-b), as cited in Yechiel Michael Barilan, explained "certain promises should be observed as a matter of character and regardless of considerations of justice and harm."[1004] For Thomas Aquinas, promises involve morally binding behavior and conduct, even though they are not enforceable.[1005] With respect to Barilan, based on his human rights perspective, promise and contract are well clarified. A contract is designed to “be an enforcement commitment” while a promise is a commitment (to perform) without acceptance of enforcement.[1006] Here Barilan points out that the capacity of contract is limited because of its restriction within formulation, logical structure, content, arbitration (authority) and enforcement.[1007] On the other hand, promise fits well with some particular content. That is because interpretation of the promise and deciding to follow it is always subject to the jurisdiction of the virtuous conscience of the party who gave his assurance. At this point, the degree of

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[1001] David Gauthier *Morals by Agreement* (Oxford University Press, 1986) at 204-209.
[1002] The UN global Compact Office "United Nations Global Compact Annual Review 2010" (16/12/2014)<*www.unglobalcompact.org/docs/news_events/8.1/UN_Global_Compact_Annual_Review_2010.pdf*>.
[1003] Dori Kimel *From Promise to Contract: Towards a Liberal Theory of Contract* (Hart, Oxford, 2001) at [7-14].
[1004] Yechiel Michael Barilan *Human Dignity, Human Rights, and Responsibility: the new language of global ethics and biolaw* (MIT Press,Cambridge, Mass, 2012) at [174-176].
[1005] At 175.
[1006] At 175.
[1007] At 176.

trust between the party who gave his assurance and the party who received the assurance, as this one is higher than that amongst the two parties to a contract.[1008] For example, the covenantal marriage (hymeneal promise) between two people who commit to love each other forever is different from the so-called arranged marriage. Barilan further suggests that although enforcement may not necessitate performance, the fundamental value of moral claim for its own sake might be stronger that the legal force of contract. Whilst signing a weight-loss contract may guarantee the enforcement to be forced, yet that contract does not signify the success of loss-weight. Here, the duty to performance is not reliant on legal force in the contract, rather than self-promise.

To describe (commercial) contract law Hogg explains the following "a promise is a statement by which one person commits to some future beneficial performance, or the beneficial withholding of a performance, in favor of another person."[1009] Hogg describes six particular actions that present similar characteristics to a contract. These include vows, oaths, threats, gifts, warranties, and agreement.[1010] A vow and an oath are used interchangeably all over human society. Whereas a vow is a promise made to the highest sacred authority (God), an oath is a statement of personal commitment, presenting in front of others under the name of those with authority (God) and to make such a statement is sacred regardless of the benefit for the said commitment.[1011] According to Hogg, a vow is considered as a promise that is too general in that it does not require the performance compared to "an oath swearing" which has been continuously practiced up until today. Threats and donation/gift are counted as promise without Holy beliefs. A threat can be viewed as a negative promise as it could also relate to coercion because the party or promise commits to do harm to others, while contrasted with donation/gift this is a positive promise because it contains a virtuous cause such as a gratuitous one.[1012] Warranties/guarantees can also be counted as promise in a sense of "conditional promise", intending to commit the statement under the future provision.[1013] Because there are various definitions of agreement Hogg suggests "agreement is the end result produced by a promissory mechanism which demonstrates concurrence of the parties' wills in the substance of what has been promised."[1014] In terms of the force of promise in morality and/or in law, promise establishes rights and duties among parties. Basically there are rights in *personam*, applied in interpersonal and right *in rem*, applied in property.[1015] So, the question of promise with moral force will be dependent on the types of morality in terms of those that receive recognition by society.

[1008] At 176.
[1009] Martin Hogg "Competing Theories of Contract: An Emerging Consensus?" in DiMatteo A. Larry, Zhou Qi, Saintier Severine, Rowley Keith (eds) *Commercial Contract Law: Transatlantic Perspectives* (Cambridge University Press, Cambridge, 2013) at 18.
[1010] Hogg *Promises and Contract Law*, above n 984, at [38-57].
[1011] At 39.
[1012] At 47.
[1013] At 49.
[1014] At 51.
[1015] At [60-62].

There is an example of the enforcement of promise in morality that is recognized in law as so-called "natural obligations" in the Anglo-American legal system.[1016] Its root comes from the Roman law and is referred to "*obligatio naturalis*" which directly reflects on the traditional conception of law of nature or "*ius naturale*".[1017] In modern legal practice, natural obligations can be seen in the Louisiana Civil Code of 1870 of the USA and the new amendment of 1985.[1018] According to David W. Gruning, the prior version of the Code on obligations and contract under Title III of Obligations: QA 1757:1-3, natural obligation was recognized as "...the duty created by the obligation operates only on the moral sense..."[1019] In the new version, the natural obligations are redefined in a more generic term according to the new amendment under Article 1760 as stated that "moral duties that may give rise to a natural obligation. A natural obligation arises from circumstances in which the law implies a particular moral duty to render a performance."[1020]

In terms of effectiveness, the current law states the following "[A] natural obligation is not enforceable by judicial action. Nevertheless, whatever has been freely performed in compliance with a natural obligation may not be reclaimed. A contract made for the performance of a natural obligation is onerous."[1021] It is good to note that although natural obligations have still been used in legal practice, the commentator suggests that compliance was complex. So, that result has led the Louisiana legal system to develop an unusual method in terms of its own legal tradition.[1022]

Therefore, providing the traditional relationship of morality and law by human authority which related to natural obligation would depend on the degree of moral classification of promise in that those societies arrange force of promise into law. It may require consensus or ground norms from the members of the community to gain legitimacy of those promises. The achieved instance can be seen in international human rights law (discussed below).

5.4.2 Secular Virtues related Compact in the Social Contract Theory

The key issue in this section points to the importance of covenantal wisdoms which is viewed as to the fundamental ethics for forming the social contract. However, it is argued that there is no connection between covenantal wisdoms and the social contract. Indeed, those Enlightenment philosophers such

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[1016] David V. Snyder "The Case of Natural Obligations" (1996) 56 *Louisiana Law Rev.* 2, at [423-436].
[1017] At [424-425].
[1018] At [425-426].
[1019] See, the Louisiana Civil Code of 1870: Title III of Obligations: QA 1757:1-3; available at <www.loyno.edu/~gruning/Sales&Leases/repealedobligations.html> (visited on 9/11/2014). "if the duty created by the obligation operates only on the moral sense, without being enforced by any positive law, it is called an imperfect obligation, and creates no right of action, nor has it any legal operation. The duty of exercising gratitude, charity and the other merely moral duties, is an example of this kind of obligation."
[1020] At Article 1760, the Louisiana Civil Code of 1984, no. 331, §1, eff. Jan. 1, 1985; See also, source from Louisiana state legislature <www.legis.la.gov/legis/Law.aspx?d=108994>.
[1021] At Article 1761.
[1022] Snyder, above n 943, at 434.

as Thomas Hobbes, Immanuel Kant, and Jean-Jacques Rousseau made use of religious covenants as they saw fit for their theory.[1023] The covenant concept during the Enlightenment era was grounded on rational thinking to justify philosophical theories. However, as ordinary people who were a part of a religious community, those philosophers were hardly deniable to integrate or incorporate some sense of religious values to develop their own works. A secular dialogue was popular in challenging the dictates of the old traditional paradigm. It was said to constitute a new covenantal paradigm to Western society, known as the 'social contract' by Thomas Hobbes in *Leviathan*.[1024] This social contract established the public commitment, shared aims, and 'common-weal' of all. Apart from the spiritual sphere, the theory describes that each person is considered independently of the others based on his/her own reasons and interests. Rights and duties originate in "the mutual beneficial interactions" among those parties.[1025] For almost all contractual parties, they join the contract because the expectable benefits from such agreement outweigh the expectable benefits of not having it. So, within the social contract individual rights/duties were established in recognition to protect the parties as regards their duties for the community. Those persons cooperate and help each other as long as they get some kind of help in return. The advantages lead to a further level of negotiation and bargain, depending on powerful one.[1026]

Scholars distinguish Hobbes's social contract in two sub-types, namely, "contractarianism and contractialism."[1027] It is important to note that those who found Hobbes' social contract acceptable did not deny completely the virtuous core of solemn commitment, instead they were careful to choose some moral good that fit with their secular views. So, moral duty is taken to back up the social contract. Thomas Hobbes's version of social contract theory suggested that human society equated to or was at a "state of nature" (something that was against human's wellbeing and happiness) that was disorder and anarchy.[1028] Hobbes described life at such state as "nasty, brutish, and short and war of all against all" in which everyone competed for scarce resources to meet their own needs. So, this anarchy needed to be controlled. If the state of nature (consisted of the four facts) was combined with the absence of government institutions or lack of legal enforcement, the consequence was very hostile.[1029] Since human life in a disorder stage (Hobbe's "state of nature") was bound to be miserable, people wanted to escape from it.[1030] Hobbes persuaded that all individuals need to join the social contract and formed the governing society for several reasons. These were (1) equality of the same basic needs, (2) rough

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[1023] Stephen L. Darwall *Contractarianism, Contractualism* (Blackwell, Oxford, 2003) at [1-3].
[1024] Henrik Palmer Olsen and Stuart Toddington *Law in Its Own Right* (Hart, Oxford, 1999) at [121-123].
[1025] A. P. Martinich (ed) "Covenant (*pactum*)" in *A Hobbes Dictionary* (13 October 2015) <http://www.blackwellreference.com>.
[1026] Ibid.
[1027] Darwall *Contractarianism, Contractualism* above n 316, at [4-7].
[1028] David Boucher and Paul Joseph Kelly *The social contract from Hobbes to Rawls* (Routledge, London, 1994, 2003).
[1029] Sharon A. Lloyd and Susanne Sreedhar, "Hobbes's Moral and Political Philosophy"(Spring 2014 Edition, 30 May 2012) in Edward N. Zalta (ed) in *The Stanford Encyclopedia of Philosophy* at <http://plato.stanford.edu/archives/spr2011/entries/hobbes-moral/>.
[1030] At 3. the state of nature.

equality of individual power, so a pact was stronger than individual, (3) limited altruism in egoistic individuals, driven by self-interested motives, so there was no mercy when scarcity of resources or disasters were encountered and, (4) the supply of resources required to meet people's needs is often not sufficient; there was not enough of a resource to go around. This suggestion became a will of power for all individuals to bind themselves in the contract. For society, it needed to develop and adopt 'a social contract', and enforce this contract. For Hobbes, the social contract is a set of rules governing social interactions. [1031] While some of the rules are laws, others are moral norms.

Hobbes's contractarianism (compact) stems from considering the circumstance of an agent (government) reflecting liberally of others under his/her own desires or interests.[1032] Everyone sees what s/he desires as good and as such gives rationality to realize it. Cooperation among people exists while they give up the pursuit of their own independent interests and follow rules or roles, so the collective interests followed by such collective results could be better than insisting on the interests of individuals.[1033] For example, the unrestricted liberty to murder or steal forgoes in provision that others would do the same. For contractarians, whatever the decision is right or wrong is determined by rules of cooperation of the wider sort.[1034] So, in terms of the legal enforcement of the social contract, it is carried out by supreme authority and the moral rules are enforced by social disapproval. Cooperation is gathered by religious and cultural values on which the society depends. The point of morality according to Hobbes's social contract theory is to help society eliminate the state of nature, so that humans can live better and more productive lives.

However, it is pointed that a social-contract agreement is grounded on the presumption that although "no agreement" is bound by nothing, (lack of force), it is still in effect to those who share their own interests, desires, and values.[1035] So, that means such social contract is still bound by something (moral rules) that it is unlike a legal contract. At this point, the 'social-contract' requires secular virtue (trust) in the party who will perform in the future. [1036] Even though a legal binding agreement is still based on both legality and morality among parties, it can be possibly bargained or negotiated. In this assumption, individuals have a moral claim to act freely in regard to the resources they could demand if there were "no-collective agreed rules of cooperation" (mutual coercion mutually agreed upon). It is argued that "contractualism" based on Kant's works that the collective rules resulted by bargain or negotiation cannot have moral force.[1037] Thus, such rules could be by assumption lacking legitimacy. The argument based on Kant who maintains that individuals are subject to the moral law in regard to the "theory of (men's) natural rights." For Kant, a

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[1031] Baumgold Deborah *Contract theory in historical context: essays on Grotius, Hobbes, and Locke* (Brill, Boston 2010).
[1032] Darwall, above n 316, at [3-5].
[1033] At 3.
[1034] At 4
[1035] At 4.
[1036] Shane D. Nicholls "The Global Covenant: The Earth Charter and the Convept of Covenants in International Law and Environmental Governance" (2010) 14 *NZJEL* 103-133, at 109.
[1037] Darwall, above n 316, at 5.

common law for a community of free moral agent must be considered as "a universal law" which would become the only law that would be legislated.[1038] Nevertheless, here, we can see that anthropocentric social contract grounded on both contractarianism and contractualism does not totally deny traditional covenants, rather is reliant on them to support its own theory.

5.4.3 Covenant in Political Association

It is important to note that before the Enlightenment Age, the European continent was once governed by religious empire so religious covenants have a long political history throughout the continent.[1039] The covenantal relationship to God binding people with Christian faith was mainly ruled by a dual authority; one was the Catholic Church from the center and the second was the Christian king over the ethnic groups.[1040] However, the unity of Christendom appeared to break up since the conflict of the Biblical understanding between the Old and New Testament.[1041] As a result, the Reformation under the influence of Calvin and Zwingli, and other reformed churches emerged and established its own belief system.[1042] This consequence reflected a political shift as well.

The idea of covenant still presented as a core commitment for political reform. In regard to early modern nationalism, covenant drew individuals or groups to form some certain degrees of national identity in the new kingdoms.[1043] Groups of people joined together in voluntary covenant to enter into political relationships, limiting some of their own interests to establish a political body against dictatorship. For example, John Witte refers to Johann Althusius (1557-1638) who earlier applied covenant to today's political science.[1044] In Witte's word, Althusius created a great work based on covenantal values by elaborating the Calvinist theory of Natural Law, popular sovereignty, and the rights and liberties of individuals and association.[1045] Althusius's publications, particularly *Politica, 1603* set forth a significant theory in regard to federalism and then constitutionalism. In *Politica*, many of his references are reliant mainly on the covenants of the Bible, local Dutch laws, and the Dutch Revolt. He explored a way of covenant (a coming together to the journey of the Promised Land) of the ancient Dutchmen (William of Orange) against tyranny from the King of Spain in the late 1560s and 1580s.[1046] According to Smith, by the early 17th century, traditional covenant united people to form nations in a manner that was embodied

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[1038] At 5.
[1039] Anthony D. Smith *The Cultural foundations of Nations: Hierarchy, Covenant, and Republic* (Blackwell, Malden, 2008) at 108.
[1040] At 114-115.
[1041] At 118-119.
[1042] At 118.
[1043] At 129-130.
[1044] John Witte Jr. *The Reformation Rights: Laws, Religions, and Human Rights in Early Modern Calvinism* (Cambridge University Press, Cambridge, 2007) at [142-145].
[1045] At 142-143.
[1046] At 143.

by two characteristics that were overlapping.[1047] The first one was a covenantal relationship between God and people as well as between king and people. This was called "covenanted nations."[1048] The second called "covenantal nationalism"[1049] was a single covenant binding all nations to the community to God as a whole.

In a later century, oath, solemn promise, and commitment based covenantal tradition were considered an original construction underlying a modern constitutionalism and federalism in the new world.[1050] To create a good-regulated society the founders of the United States did not only depend on the civil rights for resistance against the British Empire, they also depended upon the covenantal values of individual and public rights. Influenced by Althusius's theory, the history of the earlier foundation of the constitution of the United States shows covenant ideas linking between society and politics, rights and liberties, and law and order to create the good society. Several commentators observe that the Massachusetts State Constitution adopted in 1780, between the time of the Declaration of 1776 and the Constitution of 1787 announces with it the clear acceptance of covenantal relationship. His reference is that as follows:

> "The body-politic is formed by a voluntary association of individuals. It is a social compact, by which the whole people covenant with each citizen and each citizen with the whole people that all shall be governed by certain laws for the common good. It is the duty of the people therefore, in framing a Constitution of Government, to provide for an equitable mode of making laws as well as for an impartial interpretation, and a faithful execution of them; that every man may, at all times find his security in them."[1051]

Daniel Elazar also points out the notion of covenant relates to constitutionalism.[1052] The constitution is codified by the people or the political groups and in such a proceeding that those people implement "their prior covenants" into a written format.[1053] So, the constitution may include a restatement or reaffirmation of the original covenant that they committed to or made a commitment to uphold. Under this point, a formality of un-concreted declaration is transformed by mutual consent to the substantial constitution.

5.5 Covenants as Agreement in Domestic Law

The wording, covenant, is applied in law by way of various characteristics. Many terms are often used under contract law. Some are used in a marriage covenant, or agreement among members of a religious organization, or land conservation, or a treaty between sovereign states. In a case related to contract, defined by Law Dictionary by Barron's Legal Guides (1996), a covenant is a legal agreement as the following explanation states:

[1047] Smith *The Cultural foundations of Nations* above n 964, at [129-132].
[1048] At 131.
[1049] At 131.
[1050] Gismondi, above n 61, at [30-31].
[1051] Bosselmann, Engel, and Taylor, above n 126, at 50.
[1052] Daniel J. Elazar *Covenant & Constitutionalism: the great frontier and the Matrix of Federal Democracy* (Transaction Publishers, New Brunswick,1998) at [7-8].
[1053] At 75.

> "An agreement of promise to do or not to do a particular thing; to enter into a formal agreement;... an agreement, convention or promise of two or more parties, by deed in writing signed, and delivered by whichever for the parties pledges himself to the order that something is either done or shall be done or stipulates for the truth of certain facts." [1054]

A covenant may have conditions and prerequisites that qualify its undertaking in fulfillment, including the actions of other parties. According to Barron's Legal Guides (1996), there are three different subtypes of covenant. "Concurrent covenant requires the performance by one party of his obligation when the other party is ready and offers his performance."[1055] "Dependent covenant: those in which the obligation to perform one covenant arise only upon the prior performance of another and therefore, until the prior condition of performance has been met, the other party is not liable to an action on his covenant."[1056] "Independent [mutual] covenant: those actions must be performed by one party without reference to the obligations of the other party."[1057]

5.5.1 Covenant in Marriage Law

In a case of covenants in marriage, an example can be seen in the State law throughout the United States. To solve the marriage problem in the well-known American's phrase like "the easy love and easy divorce" that increased the rate of the broken family and caused no responsibility for children has had a serious impact on the American community. The first marriage covenant law of the US enacted in 1997 in Louisiana aims to provide covenant of marriage for couples as an alternative optional. [1058] The law stated that;

> "A covenant marriage is a marriage entered into by one male and one female who understand and agree that the marriage between them is a lifelong relationship. Parties to a covenant marriage have received counseling emphasizing the nature and purposes of marriage and the responsibilities thereto. Only when there has been a complete and total breach of the marital covenant commitment may the non-breaching party seek a declaration that the marriage is no longer legally recognized."[1059]

John Witte Jr. describes covenant marriage as "a pledge of presumptive permanent sacrifice," so that relationship between husband and wife is much more than a sexual partnership. [1060] This covenant of true love captures the higher dimensions of marriage that reflects human dignity as privilege rather than sexual instinct. According to the law, the couple may choose a mere contract marriage or a covenant marriage. The former requires less of a commitment in terms of marital formality "with attendant rights to no-fault divorce" while the latter provides a high promise "with more stringent formation and dissolution

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[1054] Steven H. Gifis *Law Dictionary* (Barron's Educational Series, Inc, NY, 1996) at 116.
[1055] At 116.
[1056] At 116.
[1057] At 116.
[1058] John Witte Jr. and Nichols A. Joel "More Than A Mere Contract: Marriage as Contract and Covenant in Law and Theology" (2008) 5 *U. St. Thomas LJ* No. 08-28, 595.
[1059] Melissa Lawton "The Constitutionality of Covenant Marriage Laws"(1998) 66 *Fordham L. Rev*. 2471.
[1060] Witte Jr. *The Reformation Rights: Laws, Religions, and Human Rights in Early Modern Calvinism* above n 969, at [8-9].

rules."[1061] Before the license is granted the couple who prefers covenant marriage is required to receive detailed counseling by an experienced or religious official, and swear an oath, pledging, responsibility of marriage and promising to love, honor and care.[1062] Divorce is granted in a manner of serious fault.[1063] In regard to this point, while love in human adulthood is a natural association, covenants serve to secure it. Covenant of love, honor and care arise from altruistic sense and reciprocal needs. Thus, succeeding marital covenants depend on the mutual consent of couples and freedom of choice and voluntarily initiates a solemn commitment to each other.

Much the same as Witte, Margaret F. Brinig describes that married covenant is "a set of solemn promises regarding the mutual obligations of husband and wife."[1064] With the community's witnesses, the covenants protect the bride's rights as a married woman and ensure her care and protection by the groom.[1065] Thus, covenant carries with is a whole set of duties and obligations that reflect the needs of the community as a whole. So this solemn promise cannot easily be broken even though one side does not perform fully or satisfactorily.[1066] This is as can be seen that covenant is a long term-commitment that focuses on the centre of trust obligations.

5.5.2 Covenant in Land Conservation

Covenant in a legal context can be applied to land conservation. Concept of easement in land conservation is made by voluntary commitment of the landowner to limit his/her absolute property rights with the governmental authority for preserving or conserving purposes. In terms of land conservation, under the name of covenant, it is applied in a variety of domestic conservation laws in the United States, Australia, New Zealand, and Canada in order to reduce conflicts in private property rights of landowners that have an impact on conservation activities. The landowners within their own environment will be able to enter into the covenant agreement to limit absolute property rights in land-use for the purpose of conservation. The legal roles of covenant in conservation offer an alternative choice to private owners who want to help to protect the natural environment, and do not want to lose their land to the public. So, the covenant will 'run (attach) with the land' for conservation/protection although the said land is transferred or purchased. It will become an obligation of the new landowner to take on the responsibility to protect the natural environment of the covenantal land.

For example, the Natural Conservation Act, 2002 of Australia defines a conservation covenant as "a promise contained in a deed to land or real estate which is binding upon the current owner and all future

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[1061] At 8.
[1062] At 9.
[1063] At 9.
[1064] Margaret F. Brinig *From Contract to Covenant: Beyond the law and Economics of the Family* (Hardvard University Press, Cambridge, 2000) at [6-7].
[1065] At 6.
[1066] At 7.

owners. It defines the limitations, conditions, or restrictions on the utilization of the land."[1067] It can be noted that the easement is a voluntary agreement made between a landowner and an authority that aims to protect and enhance the natural, culture and values of covenanted land. Here, while the landowner has still continued to own, use and live on the land the ecological values of the land are preserved by the landholders in partnership with the authority. In New Zealand, the Reserves Act 1977, section 77, also has an example of "conservation covenants."[1068]

5.6 Covenantal Agreement in International Law

5.6.1 Covenantal Agreement as Hard Law

In terms of international law and relation, the promise of the pact the *pacta sunt servanda* can be traced to the jurisprudential root. There are three slightly different legal notions of promise as in the following contract, compact, and covenant agreement. Although the literal text can be kept in a written form to provide evidence of the broken promise to authority, the equality of the performance is different among the three of them. According to Ernest Weekley, pact (*pacte*) has the same etymological root as covenant (*pactum*).[1069] Oliver Dörr and Kirsten Schmalenbach also suggest that the pacta sunt servanda is a normative content as old as the concept of 'treaty' itself.[1070] *Pactum* doctrine is found in several religious beliefs to demand implementation with the agreement. Later on, during the era of the Enlightenment secular philosophers used the covenant concept. This was before it became a norm of international relations in Westphalia treaty, and finally it was found in an earlier codified international law in the League of Nations Covenant.[1071]

According to George E. Mendenhall, covenant is the oldest form of international agreement.[1072] The ancient international covenants (inter-city-state relations) upheld by oaths can be found in a binding form in old Sumerian, Babylonia and Assyrian text which is different from typical private legal contracts. The ancient covenants found in Hittite text are divided into two types, those that are "suzerainty and parity".[1073] In the former covenant (one-way commitment) the supreme power still remains with the Hittite king, only the lower is bound by oaths dictated under the king's conditions. The latter covenant is a mutual one.

[1067] See, Australian Government Department of the Environment on Conservation covenants (10 November 2012) <www.environment.gov.au/biodiversity/incentives/covenants.html>

[1068] Ewing "Conservation Covenants and Community Conservation Groups: Improving the Protection of Private land"above n 334, at [315-337].

[1069] Ernest Weekley *An Etymological Dictionary of Modern English* (New York, Dover Publications, Inc., 1967) at 1024.

[1070] Oliver Dörr and Kirsten Schmalenbach (eds) *Vienna Convention on the Law of Treaties: A Commentary* (Berlin Springer Verlag, 2011) at [429-430].

[1071] At 430.

[1072] George E. Mendenhall *Law and Covenant in Israel and the Ancient Near East* (Biblical Colloquium, Pittsburg, 1955) at [26-27].

[1073] At [28-29].

Both parties are bound to abide by the same conditions.[1074] So, the ancient root of international covenants was created by promise/commitment guaranteed by oaths and bonds that were held in trust with the grace of those supreme authorities.

The norm of *pacta sunt servanda* is also found in the covenant of Islam.[1075] According to the 18th century Islamic international law scholar Shaybani, the modern version of pacta sunt servanda was developed from the *"Siyar"*, Islamic international law that governed the relationship between the Islamic state and non-Muslim states.[1076] The *Siyar* was obtained from the Treaty of *Hudaibiya* and its negotiation in 628 A.D. that was signed between Prophet Muhammad and the *Quraish* tribe of Mecca during the time of the Holy war.[1077] For the record, the promise-must-be-kept is the certain promise Prophet Muhammad gave to the people of non-Muslim states (Quraish) before his Holy armies attacked the Mecca. The Prophet announced to save (spare) the life of those in Mecca who enter Abu-Sufyan's house, or who locks himself up to their house, or who enters the Mosque.[1078] The lives of those people in these circumstances must be safe if such an attack happened. At this point, even though there was no war, or an attack on the city because both could negotiate in peace, the covenant of trust to the Prophet was kept.

However, everything can naturally adjust; covenantal agreement can be flexible or adaptable. As *pacta sunt servada* norm is not solid, so the entire agreement can be changed. Although the covenant notion of promise in this religious sense was so extreme by the time of the war, in a peaceful era the Islamic International law can be adopted depending on circumstances. Shaybani and other modern scholars stated that it is clear that the Siyar, *rebus sic stantibus,* or "changed circumstances" was relevant to pacta sunt servanda. They pointed out that the similar phrase "keep your promises" was used in a form of private contracts in commerce.[1079] Whereas from ancient times up until modern international law, covenant agreement has been utilized in connection with commercial contracts, the covenant notion of trust to Prophet Muhammad has not been changed.

Flexibility of covenants in international law occurred in the late 16-17th century. Francisco de Vitoria and Francisco Suarez drew the secular version (the social contract and Westphalia sovereignty) to reform a cornerstone of international legal agreement.[1080] And later, Bentham mixed commercial contract with the

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[1074] At 29.

[1075] Glenn L. Roberts *Islamic Human Rights and International Law* (eBook ed, eBook by Dissertation.com, Boca Raton, 2007) at [24-25].

[1076] Shaheen S. Ali and Javaid Rehman "The Concept of Jihad in Islamic International law" (2005) *10 Journal of Conflicts & Security Law* 3, at [321-343]; See also, Javaid Rehman *Siyar (Islamic International Law) A Teaching and Learning Manual* (24 June 2014) UKCLE the Higher Education Academy 2011<www.islamicstudiesnetwork.ac.uk/assets/documents/islamicstudies/An_Introduction_to_Islamic_International_Law_Siyar.pdf> at [1-74].

[1077] At [23-24].

[1078] At 23.

[1079] Glenn *Islamic Human Rights and International Law* above n 997, at 25.

[1080] James Bernard Murphy *The Philosophy of Customary Law* (Oxford University Press, 2014) at [23-40].

utilitarian view, changing the hardcore to a softer version.[1081] As a result, the modern pacta sunt servanda was recreated in a more secular version under the concept of modern nationality. Even so, this does not signify that its religious aspect disappears. By that time, religiously customary covenant was still reminiscent of the concept of *lex talionis*---the-eye-for-an-eye of the Babylonian and Mosaic codes was still reflected in the modern international law of counterforce (in a case of nuclear weapons).[1082] Nevertheless, covenant agreement that made trust to religious power was replaced by trust to the pact or group, and became more flexible as trust or good faith relating to commercial purposes as well as mutual benefit of their own group.

In regard to significant conditions that could change the fundamentals this was pointed out by Grotius in the Law of War and Peace (*De Jure Belli ac Pacis*) in 1625. Covenantal notion has a unique function, capturing Grotius's theory on "the law of Nature" in a codified format. As cited in Gismondi (2008) stated that

> "the law of nature is a dictate of right reason, which points out that an act, according as it is or is not in conformity with rational nature, has in it a quality of moral baseness or moral necessity; and that, in consequence, such an act is either forbidden or enjoined by the author of nature, God."[1083]

For Hugo Grotius, there was no law of any kingdoms (Portugal and Spain) in conflict with 'the law of Nature.' All nations are under the subject of the international common law (of Christendom).[1084] In *Mare Liberum* (1609), Grotius stated that the "seas must be free for navigation and fishing because the law of nature prohibits ownership of things that appear to have been created by nature for common things."[1085] Such rational reason draws all nations to limit sovereign power to covenant together for their common good. Therefore, they agree to be bound by law. Such customs and legal agreements are codified in covenantal agreement.[1086] Although not constituted from the agreement itself, covenantal power is activated by legal agreement, and its authority cannot be reduced because such supreme authority exists from its own inherent rightness.

In Article 26 of the 1969 Vienna Convention on the Law of Treaties (VCLT), it points out that any legal binding treaty must be performed in a good faith (trustworthiness), so after a treaty is signed and ratified, it must be obeyed. However, a treaty could be terminated if the fundamental circumstances have changed.[1087] In association with international law, "'*clausula*' *rebus sics stantibus*"[1088] or changed circumstances is recognized as a principle of international treaty law which is stated in Article 62 of the

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[1081] At [59-61].
[1082] Herman Kahn and Dibble Carl "Criteria for Long-Range Nuclear Control Policies" (1967) 55 *CAL., L. REV*. 2, 473 at [482-484].
[1083] Gismondi , above n 61, at [61-63].
[1084] At [61-62].
[1085] Weston and Bollier, above n 160, at 142.
[1086] Gismondi , above n 61, at 62.
[1087] Betina F. Kuzmarov "The place of unilateral acts in international law: understanding a (non) legal concept "(PhD, University of Hull, 2009).
[1088] Athanassios *Termination of Treaties in International Law* above n 985, at [4-5].

VCLT. Its role is to provide flexibility as exceptional character to the core contract principles.[1089] It was suggested that every contract carried with it the implied condition of *rebus sic stantibus*.[1090] What is the degree of major changed situations? For private jurist, according to Hans Van Houtte, the change in circumstance has to be fundamental that could jeopardize the survival of the State parties.[1091] Yet, it is important to note that the earlier commentator suggested that the *rebus sic stantibus* doctrine of private law was transplanted to modern international law corpus without adequate investigation on its natural jurisprudence.[1092] For those views, private jurists took it for granted that the exceptional course doctrine had to form part of the law of treaties.

It has been suggested that *Rebus sic stantibus* was brought to claim for treaty's termination and this can be viewed in the Gabcikovo-Narymoros Project and Fisheries Jurisdiction case.[1093] Mostly the argument must be reliant on the clear evidence to prove to "the rights of necessity (*Notrecht*)"[1094] in terms of changed circumstances that radical change truly impacted the treaty's fundamentals. The commentator points out that in both cases the ICJ pragmatically refused to find out the facts on a change in circumstances.[1095] Thus, the Court typically aimed to preserve the fundamental principle and narrowly interpreted the exception.[1096] The scholar points out that if the *pacta sunt servada* provides harmonious stability, *Rebus sic stantibus* dynamically accords uncertainty.[1097]

In legal technique, contractual treaty confers core principle as well as exception to favor state's acceptance. As we discussed the States are normally hesitant to make strong commitments as well as enter into shared obligations that hardly change. Both principles may effectively advocate the process of treaty law, particular to international trade law. Private international law scholars point out that the *pacta sunt servada* and *rebus sic stantibus* are considered as a cornerstone of the *lex mercatorial*.[1098] That would be because international trade and commerce on wild products have been a part of customary international law (*lex mercatorial* and *lex maritima*) and this remains recognized in modern nation states

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[1089] Hans Van Houtte "Changed Circumstances and Pacta Sunt Servanda" in Piero Bernardini and Emmanuel Gaillard (eds) *Transnational Rules in International Commercial Arbitration* (ICC Publishing, Paris, 1993) at [105-123].
[1090] Athanassios, above n 985, at 5.
[1091] Van Houtte "Changed Circumstances and Pacta Sunt Servanda" above n 1089, at 109.
[1092] Athanassios, above n 985, at 11.
[1093] *Gabcikovo-Nagymoros Project* above 202 at 65. See also, *Fisheries Jurisdiction Case* (*Federal Republic of Germany v. Iceland*) [1974] ICJ Rep 175 at 7, [17-18], [64-65].
General List No 56 [1973] ICJ Rep 49 at par 17; See also, Kuzmarov F. Betina, above n 989, at 211-212.
[1094] Athanassios, above n 985, at [17-20].
[1095] At [17-18].
[1096] At 18.
[1097] David J. Bederman "the 1871 London Declaration, Rebus Sic Stantibus and a Primitive View of the Law of Nations" (1988) *82 American Journal of International law* 1, at [1-40].
[1098] Van Houtte, above n 1010, at 109, 115.

until today.[1099] At this point, the stable version of public covenant that originally forms the *pacta sunt servada* is blurred by a weaker version of private contract.

The paradigm shift from contract to covenant can be possible for biodiversity governance. As mentioned above, flexibility of the hard-law treaties may have possibly occurred by changing conditions in fundamentals. Because biological resources have been treated as the goods since the earlier era, international biodiversity agreement is a legacy of commercial/trade agreement. So, international trade law on biological resources has been dominated over public concerns of biodiversity. The core covenant of the law of Nature is eclipsed by contract. However, this legal culture needs to change. The earth's biodiversity crisis is in a critical moment. This change is more important than the remaining stability of treaty under the notion of contract. Biodiversity can no longer be considered as commodity under the contract based on private international law.

Traditionally, in the context of global biodiversity governance, only independent nation states have been recognized as a subject and object of international law, so its own sovereignty over its property includes all elements of the earth's biodiversity within its territory. International interaction among state depends on promise/commitment that they freely made. So contract notion is in line to be accepted and approved in a format of international agreement, pertaining to the enforcement of those commitments. As a result, the States create a contract to ensure their mutual benefits on the global commons. The Biodiversity Regimes are designed to serve statehood, and rights over natural resources. The agreement is built, formed, shaped in a specific way and carried out by a pact of individual states to justify the mutual benefits between the state and collective economic interests. The benefits of contractual agreement fit well over a political term of four years. Moreover, they are active in the short term rather than a long term solution and tend to include minimal responsibility and exclude community bonding. Thus, overshooting its own biodiversity grounding on weak environmental plan/policy would be accepted as long as they were enacted by accepted lawmaking process.

As discussed previously, the doctrine of the pacta sunt servanda consists of moral duty whether it links to compact or covenant. In the treaty making process, contract-based agreement is concerned only with the mutual benefits of state parties. Each individual state worries in terms of its people and the welfare of its own interests regardless of the welfare of the Earth's ecosystem. Failure to perform is a classical problem in this area.

5.6.2 Covenantal Agreement as Soft Law

In fact, the covenantal approach to the global governance is not new.[1100] Since the 1972 Stockholm Declaration, the covenant idea has been mentioned at the international level. Maurice Strong, the

[1099] David J. Bederman *Custom as a Source of Law* (Cambridge University Press, Cambridge, 2010) at [117-118].

secretary general of the United Nations Conference on environment and Development (UNCED) called for the Global Covenant on environmental protection based on (strong) sustainable development.[1101] Soft law documents provide a significant source for the covenant of the Earth's biodiversity. The eco-centric paradigm shift comprises the statements in the Stockholm Declaration 1972, the World Charter for Nature 1982, the Rio Declaration 1992, the IUCN Draft Covenant of Environmental and Development 1995, the Earth Charter 2000, and so forth. Those documents provide some sort of deeper moral duties recognizing Earth's bio-environment as a subject of international agreement that results of which are our (humankind's) responsibility. Speaking of the morality related to the Earth's biodiversity here it is that some commitments that relate to community interest are also relevant to the welfare of all life forms and humanity. They cannot be compromised by neoliberal globalization and that covenant should remain unchanged. For instance, the global spirit, as seen in the 1992 Rio Declaration, affirms at the Preamble states that the "[W]orking towards international agreements which respect the interests of all and protect the integrity of the global environment and development system."[1102] Included in it Principle 7 refers to ecological covenant that binds states to "cooperate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth's ecosystem."[1103] Regarding the said covenant of life, biodiversity as the physical condition of the biosphere that human life depends on must be protected on all counts and courses.

However, in terms of protecting the common interests (of nation states), the existing Regimes have been critiqued because of causing fragmentation and leading to states negotiating in regard to bargaining in terms of benefits over the commons, rather than protection.[1104] Governing the commons based on several regimes is articulated to contractual notion and is basically concerned with economically mutual agreement among contractual parties, and operates by a group member. So, different economic bases among states (poor and rich) allow one state to dominate others in the way it wants to. Hence, the result does not support the spirit of protect and restore the integrity of Earth's community, rather supports individuals or group interests to gain benefits to the commons.

Covenant focuses on the limitation of individual benefit and supports the benefit of all community in a mutual trust and responsibility with every other member and to the commons. In contrast, contract aims to protect individual rights and minimizes responsibility in a mutually beneficial agreement. Right and duties, emerged by the contract are limited within its parties, and they do not transfer to the commons. If we have to choose between covenant and contract, self-interest leads us to pick the one that benefits us the most,

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[1100] David Held *Global Covenant: the social democratic alternative to the Washington consensus* (Polity, Oxford, 2004); See also, Robert H. Jackson *The Global Covenant: Human conduct in a world of states* (Oxford University Press, Oxford, 2000).
[1101] Bilderbeek, Wijgerde, and Van Schaik, above n 177, at 95.
[1102] The 1992 Rio Declaration, at the Preamble.
[1103] At Principle 7.
[1104] Radoslav S. Dimitrov *Science & International Environmental Policy: Regimes and non-regimes in global governance* (Rowman & Littlefield, Lanham, 2006).

and that is the contract version as usual. The example can be seen in the exclusive economic zones of the Law of the Sea. Instead of showing an inclination to accept or approve a position of resource constraint and self-limitation, states agree to enclose the Earth's commons.

Currently the impact resulting from integrity's erosion of earth's biodiversity caused by human-made climate change has been linked to human rights violation.[1105] The concept of environmental rights and environmental justice for minority and indigenous groups in relation to biodiversity are presented as a claim for "basic rights" to protect themselves.[1106] Those commentators attempt to link human rights to live in a healthy environment to support their augments.[1107] So, the human rights approaches are well established in terms of global environmental protection. Grounded on anthropocentric argument, the human rights approach makes sense for them. Whereas, for eco-centric views, arguments based on human benefits would be to other problem-shifts such as equality among natural resources allocation, and so on. Whilst it is a strong argument, it cannot solve the long-term problems.[1108] Speaking of the degree to which human rights are important in terms of environmental protection, the rights of all individuals must be carried out with the duty of care and trust.

Nevertheless, whilst it is important to note that later on international human rights law itself does not capture its principles in a form of contract treaty, it is presented as 'a so-called covenant.'[1109] Human rights have been recognized as universal norms that are legally and morally binding.

5.7 The UN Charter and International Covenants of Human Rights

Why are certain promises among nation states under the Charter of United Nations referred to as Charter rather than the former Covenant? And why does the human rights title vest under the term Covenant and Declaration rather the UN convention? Both questions are related to each other. And both answers are as a result of the different titles among both Positivism and Naturalism. It can be said that both schools are anthropocentric rather than eco-centric. Such human law, whether it is developed from the positivist or naturalist perspective stands for serving human attitudes. For international law, law of nations is only granted by state sovereignty based on the rule of law, equality and so forth. On the other hand, the Naturalists do not totally reject the virtuous tenet of religious wisdom. In the context of human rights, at least both schools seem to agree that human rights involve human's moral nature.

Although the covenant notion seems to disappear in the international law arena since the collapse of the Covenant of the League of Nations in the early 19th century, the notion can be found in several

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[1105] Laura Westra *Human Rights: the Commons and the Collective* (UBC Press, Vancouver, 2011).
[1106] Westra, above n 209, at [3-21], at [23-45].
[1107] Derek Bell "Does Anthropogenic Climate Change Violate Human Rights?" in Steven Vanderheiden (ed) *Environmental Rights* (Ashgate, 2012), at [91-116].
[1108] Bosselmann above n 284, at [128-129].
[1109] Athanassios, above n 985, at 22.

agreements related to human rights.[1110] After WWII, the term ‘Charter’ was used to establish the 1945 Charter of United Nations. The reason that Hans Kelsen stipulated to distinguish the later UN Charter from the former Covenant was that "'Charter' is certainly a more adequate designation of the constitution of an international community than 'Covenant'. The term 'Charter' refers to the contents of the treaty whereas the term ‘Covenant’ refers to the contractual form of the contents which amounts to naming a treaty a treaty."[1111] For Kelsen, Charter equates to 'Compact' in the sense of a social contract of nation states while still retains some sort of virtuous doctrine (trusteeship among friends under secularism) that can bind all together.

Because of the extreme suffering from the horrors of war, the early founders of the UN Charter concentrated on human rights and fundamental freedom for all humans to be free from restrictions imposed by their own dictated government (from the experience of the Nazi and Bolshevik totalitarianism at that time). The "inherent dignity" was a key word stated by the Preamble of the 1948 Universal Declaration of Human Rights (UDNR).[1112] As Article 1 stated that "All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood."[1113] So, all human beings "are entitled to all the rights and freedoms set forth in this declaration without distinction of any kind...."[1114] At this point, the relationship between human dignity and rights exists. In other words, without the concept of human dignity there would have been no human rights. It can be said that human dignity is the main source of human rights and human freedom. Hence, a conception of "dignity" gave rise to human rights (although it originated from the bias of men.)[1115] Human dignity has been recognized as a universal value, which stems from moral consciousness that illustrates the intrinsic value inherent in all human beings. Yet, it is difficult to argue that the UN itself has created human rights based on fundamental sources of secular morality rather than the universal morality that can be found throughout religious belief systems.[1116] Michael Perry suggests

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[1110] The Covenant of the League of Nations (16 September 2014) the Avalon Project, Documents in Law and Diplomacy at Yale Law School Lillian Goldman Law Library, <http://avalon.law.yale.edu/subject_menus/major.asp>.
[1111] Hans Kelsen *The Law of the United Nations: A Critical Analysis of Its Fundamental Problems* (Steven & Sons Limited, London, 1950) at 1(2).
[1112] *Universal Declaration of Human Rights*,(1948) UNGA/RES/3/217.
[1113] At Article 1.
[1114] At Article 2.
[1115] Sarah Hutton "the Ethical Background of the Rights of Women" in William Sweet (ed) *Philosophical Theory and the Universal Declaration of Human Rights* (University of Ottawa Press, Ottawa, 2003) at [27-40]; and Arieli Yehoshua "On the Necessary and Sufficient Conditions for the Emergence of the Doctrine of the Dignity of Man and His Rights" in David Kretzmer and Eckart Klein (eds) *The Concept of Human Dignity in Human Rights Discourse* (Kluwer Law International, Hague, 2002) at [1-17]; and Cancik Hubert "'Dignity of Man' and 'Persona' in Stoic Anthropology: Some Remarks on Cicero, De Officiis I, 105-107" in David Kretzmer and Eckart Klein (eds) *The Concept of Human Dignity in Human Rights Discourse* (Kluwer Law International, Hague, 2002) at [19-39].
[1116] R. Ishay, *The History of Human Rights* ,above n 987, at [10-15].

that the "morality of human rights" is "a truly global morality."[1117] In other words, moral value gives human life a status of sacredness.

Thus, when such inviolability becomes law, human dignity has been recognized as human rights that are protected in a supreme legal form. Due to the sacredness of human life[1118] the UDHR has made the statement that “no human shall be held in slavery or servitude.”[1119] Even, our parts of human organism shall not be treated as either property or commodity.[1120] In this way, it can be noted that human rights emerged from the moral responsibility of the humanitarian view. The concept of human rights aims to set a legal hierarchy among different types of laws, and rights. International human rights law obtains strong commitments as the highest right of humanity recognized as a universal norm. On the domestic level, constitutional human rights guarantee that human beings have the highest protection by constitution law. Other laws that are contrary to human rights will be voided.

As human rights jurisprudence was originally constituted by Western philosophy, the earlier classical debates of human rights construction fell back onto legal naturalists. Under orthodox paradigm, human beings in ‘a state of nature’ were a part of divine sovereignty, so God granted humans 'natural rights.' Those early scholars (such as Rene Cassin[1121]) who argued for natural rights gave an example of the French Declaration's statement that "men are born, and always continue, free and equal..."[1122] In other words, it led back to the deep roots of the French political document; that was the Declaration of the Rights of Man and Citizen of 1793 during the French Revolution (although it was not adopted).[1123]

The UDHR gave anthropocentrically moral duty a legal protection. Here at this point, it was deemed that the dignity of humans was profoundly sacred and individualistic, hence human rights cannot be granted by any kinds of authority even the UN. More importantly, human rights contain a diversity of rights of humans, so they cannot belong to a single category. Some rights are positive rights, some are collective rights and others are inherited rights or basic rights. Most of them are encompassed under the terms of human rights. According to the UN Report, it was difficult for the Drafting Committee to decide whether the Bill should be captured in a form of a declaration of principle or legal binding. Fearing rejection during

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[1117] Michael J. Perry "The Morality of Human Rights" (2013) 50 *San Diego Law Review* 775.
[1118] Anat Biletzki "The Sacred and the Humane" The New York Times (USA, 17 July 2011). <http://opinionator.blogs.nytimes.com>; and Michael J. Perry "Morality and Normativity: Natural Law Colloquium Lecture" (2007) 13 *Legal Theory* at [211-255].
[1119] UDHR, above n 1013, at Article 4.
[1120] Secretariat of the Council of Europe Convention on Action against Trafficking in Human Beings Directorate General of Human Rights Council of Europe, *Trafficking in Organs, Tissues and Cells and Trafficking in Human Beings for the Purpose of the Removal of Organs* (Joint Council of Europe/UN, 2009) at 61.
[1121] UN "the Universal declaration of Human Rights: History of the Document" (23 September 2014) <www.un.org/en/documents/udhr/history.shtml>.
[1122] Jack Donnelly *The Concept of Human Rights* (Croom Helm, London, 1985) at 27.
[1123] Paul R. Hanson *the A to Z of the French Revolution* (Scarecrow Press, Lanham, 2007); See also, Raoul Vaneigem *the Declaration of the Rights of Human Beings: on the Sovereignty of Life as Surpassing the Rights of Man* (Liz Heron translation, 1st English ed, Pluto Press, Sterling, 2003).

the adopting process the Committee at the first sign, chose to present the Bill as a Declaration, "an instrument not intended to be binding, covering comprehensively a wide range of rights and 'a so-called Covenant' limited in scope and containing only rudimentary provisions of international supervision and enforcement."[1124] However when adopted, the Covenant of Human Rights was intended to be treated as the Charter.[1125] As a result, key instruments established included the 1948 Universal Declaration of Human Rights and the 1966 International Covenants on Economic, Social, and Cultural Rights, and on Civil and Political Rights, and the Optional Protocol to the International Covenant on Civil and Political Rights).[1126]

However, it can be noted that as a result of the fear of genocide, International Covenants and the UDHR represented a sort of call for the great hope of God's protection that was supported by the social contract of those nation states. In this way, the key point explaining the reason human rights have been codified as covenant and declaration is based on the moral dignity of natural law notion under God's sovereignty. For the naturalists, the basic rights of human beings are inherently intrinsic rights for their own sake; and such rights cannot be granted by the UN or by any kind of government or authority. As mentioned above, human rights comprise moral duties both secular and pious, which already exist by common recognition. In this assumption, the realization in moral or legal terms is that because human rights truly exist for all individuals therefore this is cause enough to require enforcement of them (as discussed above in relation to the force of promise in morality). Therefore, it becomes a legal obligation/responsibility/duty of all the UN members to uphold the human rights of all human beings. At this point, as human rights are not limited within state's territory or as a part of UN Charter, human rights become universal norms. For the UN and all its members, they play a role only as a guardian to protect and compel the members, to ensure human rights must be protected and promoted. As can be seen that the General Assembly recommended only that "every individual and every organ of society shall constantly keep in mind the declaration and shall strive 'by teaching and education' to promote respect for the rights and freedom formulated in the Declaration."[1127] Inevitably, those espousing positivism disagreed. For several decades, after the emergence of the UDHR and the International Covenants, human rights have still been questioned about the lack of legal enforcement or even moral authority. There is little if any explanation of the way in which it is necessary for the dignity of humans and these rights to be kept in a form of covenantal instrument. For Kelsen, that naturalist's reason was too theoretical.[1128] (Here, in the thesis this debate between both schools is out of our scope.) At present the EU human rights system can be said to be the most powerful system of human rights enforcement. The European Convention for the

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[1124] Hersch Lauterpacht *International Law and Human Rights* (London, Steven& Son Limited, 1950) at 273.
[1125] At [276-277].
[1126] Sweet William (ed) *Philosophical Theory and the Universal Declaration of Human Rights* (University of Ottawa Press, Ottawa, 2003) at [6-7].
[1127] Kelsen *The Law of the United Nations,* above n 1111, at 39.
[1128] At 40.

Protection of Human Rights and Fundamental Freedoms has been signed and ratified and established at the European Court of Human Rights to ensure that moral dignity of human rights will be protected.

However, anthropocentricism extols the dignity of abstract human beings to the fullest extent, at variance with the non-anthropocentric world. In terms of the freedom of humankinds as having rights without any particular responsibility, this can go hand in hand with neo-liberalism. And in terms of biodiversity, the process of free trade can destroy earth's biotic community within one human generation.

5.8 Human Rights and Responsibilities for Bio-Environment Protection

Although human rights are not a core objective of the thesis, they are relative in terms of the moral responsibility that human beings have to take care of their home, Earth. Hence, speaking of the term 'right', it is suggested that *such right* is involved with the conception of moral rightfulness and legal entitlement.[1129] The rights of humans to live in a clean and healthy environment cannot be considered in isolation from moral/ethical responsibility avoiding harm to natural environment.[1130]

Here in this part, it is argued that legal right needs to engage with moral right, so the right that seems to be rightful needs to be both legally and morally. Bosselmann critically points out that environmental human rights should be interpreted in line with the ecological ethic.[1131] His concern points out that is because the inherent anthropocentricism is so deeply rooted in the development of human rights. With the scope of traditional western ethics, human responsibilities are limited to human society only, so humans need no responsibility to non-anthropocentric world.[1132] At this point, human rights may be biased when human rights will be used to balance between human needs and nature protection. According to Aldo Leopold's the Land Ethic as cited in Fox, "a thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends otherwise."[1133] The key point here is that individual rights to exploit or harvest biodiversity in respect of human rights must be grounded on common responsibilities related to environmental and biodiversity protection. Otherwise such legal rights may be recognized by law, yet cannot be right in terms of ethical/moral rightfulness.

Even though international human rights law posits individual rights of humans as the center of the universe, environmental protection is suggested as a core concern of human rights.[1134] If human rights

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[1129] Donnelly *The Concept of Human Rights*, above 1122, at 3.
[1130] Klaus Bosselmann "Environmental and Human Rights in Ethical Context" in Anna Grear and Louis J. Kotzé *Research Handbook on Human Rights and the Environment* (Edward Elgar, Cheltenham, 2015) at [531-549].
[1131] At [544-545].
[1132] At 549.
[1133] Warwick Fox *A Theory of General Ethics: Human Relationships, Nature, and the Built Environment* (MIT, Cambridge, Mass, 2006) at [40-41].
[1134] John H. Knox *Report of the independent expert on the issue of human right obligations relating to the enjoyment of a safe, clean, healthy and sustainable development* UNGA/A/HRC/22/43 (24 December 2012).: See also,

have been created to serve the enjoyments of humans for their own sake based on their interests and judgment with accepted law and self-moral sense, the positive way to govern human rights with environmental responsibilities would present another problem. As discussed, some argue that there is not any kind of authority to erode human rights. Therefore, human rights must be limited by their own moral duties. The scholar claimed that human rights were (hu) man's moral nature obtaining from human dignity that arose from human action. Furthermore, it has been argued that "human rights are not 'given' to man by God, nature, or the physical facts of life; to think in such a way is to remain tied to a vision of human rights as things."[1135] Donnelly pointed out based on the 'constructivist theory of human rights' that human rights represented the choice of a particular moral version of human potentiality that is recognized by a human institution.[1136] Associated with the constructivist theory Donnelly expressed that "human rights established and protect the social conditions necessary for the effective enjoyment of moral personality."[1137] For him, human rights are established to protect the moral dignity of humankind from intrinsic human nature, so they are not a pure legal right serving human freedom, rather they are involved with agreeable morality and social responsibility.[1138] Donnelly further argued that rather than trying to define the abstract characteristics of the moral person, Donnelly focused on nature and nurture of an individual that result to society.[1139] Hence, human rights gave a structure of social practices aimed at achieving a particular range of development of the inner inherent potentials of human.[1140] In this way, human moral reality links to the ecological reality that surrounds those human beings.

It should not be surprising why Perry Michael points to the core morality of human rights from the viewpoint of human beings as the species Homo sapiens.[1141] Moreover, the apes who live on Earth is now going to move out of the old natural law paradigm which was deemed as the supreme humans whose rights are given by God. Therefore, it can be understood that as human beings are a part of the Earth's community, all are equal with the same inherent dignity. This fundamental conviction of Perry leads us to the further questions of the moral responsibility of human beings to the natural environment. In neo-Kantian philosophy human's responsibility to nature as developed by Hans Jonas (*Das Prinzip Verantwortung*)[1142] suggested the three dimensions of responsibility to nature. These include the

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UNCHR,UNEP *Human Rights and the Environment: Rio+20: Joint Report OHCHR and UNEP* (2012) (5 June 2013) available at<www.unep.org/delc/Portals/119/JointReportOHCHRandUNEPonHumanRightsandtheEnvironment.pdf>.

[1135] Donnelly, above n 1122, at [31-33].

[1136] At 31.

[1137] At 32.

[1138] At [32-33].

[1139] At 32.

[1140] At 33.

[1141] Michael J. Perry "The Morality of Human Rights: A Non-Religious Ground?" (2005) *54 Emory Law Journal* 97 at 150; and Michael J. Perry *Toward a Theory of Human Rights*: Religion, Law, Courts (Cambridge University Press, Cambridge, 2007) at 29.

[1142] Michael Zank "Where Art Thou? Bible Perspectives on Responsibility" in Barbara Darling-Smith (ed) *Responsibility* (Lexington Books, Boston, 2007) at 63.

"vulnerability of nature, the new role of knowledge in morality, and nature rights."[1143] Although Jonas rested his argument on traditional natural rights, his philosophy attempted to expand human's moral responsibility towards human's actions towards nature environment. If human beings can have responsibility for their own personal life and have respect and care for other human beings, having responsibility should link to being accountable to other things relating to them. Since the ecological crisis is clear, so it is undeniable to refuse legal accountability. Responsibility equates to moral or legal accountability and is related to freedom of choice.[1144] People often claim their freedom of choice, so they are free to choose their own action without being forced. On the other hand, such action includes foresight, circumspection, precaution, avoiding harm, and so forth. The rational predictability in a potential cause of harm brings responsibility and legal obligation.

To reconcile human rights from an ecological perspective, Bosselmann suggests "ecological human rights".[1145] The conception aims to link the "intrinsic values of the humans with the intrinsic values of other species and the environment."[1146] In other words, human dignity as human nature cannot be separated from ecological integrity of the Earthly biotic community. For example, if every human has the right to life, the person should live in a harmony with nature that sustains the way they live. Care and respect for the natural environment can be counted as a moral responsibility and legal obligation of human nature in realization that humans are a part of biotic community.[1147] The water we drink and air we breathe and all raw materials we consume are the result of the ecological integrity that sustains human life. If every human has the right to health, the person should live in a healthy environment. If every human has the right to an alliance with nature, the person must take responsibility to take care of nature first.

As it relates to the non-anthropocentric paradigm, the moral obligation in human rights includes respect for non-anthropocentric sphere is clear in the study of environmental ethics. In terms of respect, "the Respect for Nature" by Paul W. Taylor, based on the rules and duties of humans in respect for nature, is often cited in conservation studying.[1148] Taylor's environmental ethics provide the Rules of "Non-maleficence" (non-abusive), "Noninterference" (non-intervention), "Fidelity" (honesty) and "Restitutive Justice."[1149] (A) The non-abusive approach requires that humans do no harm to any living creatures.[1150] Humans bear the accountability of refraining from any act that could harm biotic organisms and their

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[1143] Hans Jonas *The Imperative of Responsibility: In Search of an Ethics for the Technological Age* (The University of Chicago Press, Chicago,1984) at [6-8].
[1144] Steven C. Rockefeller "Ecological and Social Responsibility" in Barbara Darling-Smith (ed) *Responsibility* (Lexington Books, Boston, 2007) at [182-183].
[1145] Bosselmann, above n 284, at [131-132].
[1146] At 132.
[1147] Bosselmann "Environmental and Human Rights in Ethical Context", above n 1130, at 545.
[1148] Paul W. Taylor "The Ethics of Respect for Nature" in Donald VanDe Veer, and Christine Pierce (eds) *The Environmental Ethics and Policy Book* (3rd ed., Wadsworth Publishing Company, Belmont, 1998) at 160.
[1149] Paul W. Taylor *Respect for Nature: a Theory of Environmental Ethics* (25th anniversary ed, Princeton University Press, Prinction, eBook by ebrary, 2011) at [172-190].
[1150] At [172-173].

intrinsic rights. Taylor suggests that humans do not have a duty to prevent any harm caused by our actions, nor do we have to reduce suffering or aid the organism in attaining its own value. Taylor's ethics of respect to nature limits moral consideration to one's self (moral agent) or self-control. (B) The rule of non-intervention requires humans not to disturb nature and to respect the freedom of organisms and the biotic community.[1151] In this sense, what Taylor attempts to say is that humans should not try to control, manipulate, modify or even manage nature. Not interfering with the way of nature is a duty. (C) The rule of honesty is also a duty that requires us to respect individual wild animals or our own captive animals.[1152] For example, hunting, fishing and other activities involving wild animals should be treated fairly. Overuse of advanced technology and wastefulness and extravagance in terms of hunting and fishing illustrates disrespect for nature. (D) The final rule of Taylor's Restitutive Justice focuses on compensation of a wrongdoing of the moral agent in such a specific duty.[1153]

Furthermore, these specific duties of humans lead to 'equity' for sharing biological resources. How do humans treat biodiversity in a fair and just way? In legal theory, according to Christopher D. Stone, five areas of equities are related to the Earth's biodiversity commons. These include (i) inter-national equity (regarding the sorts of benefits and functions of biotic resources among nations);[1154] (ii) intra-national equity (regarding the sorts of the benefits and functions within nations, particularly to indigenous peoples and local communities);[1155] (iii) inter-generational equity (regarding to duties of future generations);[1156] (iv) inter-species equity (regarding the sorts of conservation efforts among competing species and ecosystems);[1157] (v) planetary equity (regarding how much of the Earth's system and biotic resources homo sapiens claim to exploit in competition with other species.)[1158] The focus of these equities areas which are part of Stone's theory point to fair use of the Earth's biodiversity commons which addresses all kinds of stakeholders depending on the Earth's integrity.

Similar to Stone's equities for inter-species and Earth, Bosselmann's ecological justice further enlightens the scope of justice to overlay the non-human sphere as a part of justice (justitia communis).[1159] From Bosselmann's point of view, ecological justice captures the poor, the future generation and also non-human species. Ecological justice is different from environmental justice. While the former stands on an eco-centric basis, the latter is anthropocentric. Instead of the expansion of the traditional anthropocentric justice under the context of legal rights or justice to capture human moral sense, via paradigm shift, ecological justice integrates a transformative approach. Bosselmann footnotes that "when Jesus Christ or

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[1151] At [173-179].
[1152] At 179.
[1153] At [186-190].
[1154] Christopher D. Stone *Should Trees Have Standing?,* above n 339, at [123-129].
[1155] At 123.
[1156] At 123.
[1157] At 123.
[1158] At 123.
[1159] Bosselmann "Justice and the Environment: Building Blocks for a Theory on Ecological Justice", above n 344, at [30-57].

the Buddha preached a compassionate approach with even the lowest caste, they were not urging the moral high priests to apply their principles more widely, rather to reject an ethic in which people are honored and respected on the basic of status, wealth, skin, color and the like."[1160] The most important is the eco-centric paradigm. In terms of the legal rights that humans create in relation to the environment or some specific species or a way to humanely treat species or expand such rights/justice to other groups would be bias or discrimination or unfairness to another group at the same time, so they would not achieve ecological justice.[1161] Clearly human beings and biodiversity do live within a particular environment, yet Earth does not belong to a single species, and the zoological and botanical parks are not a home for other species. In this sense they are not a resource or commodity for human benefits. In this way, *Homo sapiens* are placed back to some sense with respect to the biotic community. Our compassion to non-human species is inseparable from the affection found in human beings for the animalistic inherent in their own biological culture embedded in their moral senses.[1162] The right of human beings to life should respect other creatures to life in the same way. Our equity should extend to share to others to enjoy the fruitfulness of the earth's biodiversity in commons with us. Therefore, the wisdom of eco-centrism should not remain foreign to concerns of restoring the life forms on Earth and its species in all community of justice.

5.9 Conclusion

The *pacta sunt servanda* can be interpreted and distinguished in three different terms including covenant, contract, and compact. These three legal technical terms have been intelligently created to capture different kinds of promise/commitment. Contract fits with private and business aspects that are narrow to protect the benefit of contract parties. Covenant and compact are more appropriate to protect commitment/promise of community or political groups because both have a constitutional and public character. However, whilst compact deploys secular ethics to secure the bond, covenant adopts traditional norms to join all parties together. This better understanding will impel us to move beyond the so-called anthropocentric social contract. This is because achievement of global biodiversity governance requires non-anthropocentric perspectives in its policy and operation. Although the notion of covenant captures ecological ethics, green-religious and traditional belief doctrines, it does not totally deny secular versions. Beyond anthropocentric reductionism and neoliberal biodiversity, covenant expresses the ecological consciousness of participants that views biodiversity as a natural condition of all life forms rather than commodity for humans alone. This is an eco-covenant approach.

[1160] At 50.

[1161] Bosselmann, above n 284, at 131.

[1162] Graham Harvey *Animism: Respecting the Living World* (Columbia University Press, NY, 2006) at [3-28].

CHAPTER 6: THE ECOLOGICAL COVENANTAL GOVERNANCE

6.1 Introduction

The call for a commitment to reconnecting the relationship between humankind and the earth's community is attainable, if and only if mutual restraint is agreed upon. This new commitment can be captured under the notion of the eco-covenantal agreement joining between all groups of sciences, governments, the businesses and civil societies to work together on biodiversity governance based on the notion of sustainability. Rather than relying on individual states taking absolute environmental responsibility, the ecological covenant governance (ECG) refers to a network system including multi-participants such as governments, institutions, business, NGOs, and other groups relating to biological cultures into the process of the transformative aspects of global governance for sustainability. Hence, this final Chapter focuses on the role of the Earth Charter as a framework of the ecological covenant agreement, the interpretative principles, and addresses a model of alternative governance.

6.2 Conceptual Development: Eco-centric Covenantalism

It has been discussed that Hobbes' compact is anthropocentric, so the certain promises of all members of social contract rely on human's rationality in a vision of human existence on Earth as a master of non-human species and nature. And then, the Lockean compact changed the values of nature to property under the aegis or banner of human labour in the pursuit of individual happiness and so-called utilitarianism. As a result, other creatures that exist outside the social contract are only an object of the human domain and protection of the law of humankind. In terms of inter-disciplinary research as discussed in the thesis methodology, the fundamental conception has been made based on eco-centrism.

The eco-centric covenantalism applies ecological ethics in secular, religious and local wisdoms to achieve ecological sustainability based on scientific availabilities such as planetary sciences and eco-literacy. The result should advocate environmental legal theorists on a domestic and international level to constitute a better understanding of the true values of natural reality, rather than narrowing to property rights and limitation of contract based agreement. It is necessary to realize that eco-covenantalism does not signify to become anti-individual or anti-human's wellbeing or happiness in terms of the sacrifice of self-interest, privacy, freedom, or liberty. However, to achieve a sustainable society, all members of society must place ecological responsibility as a first and set the value of nature at the top-level priority so that it cannot be devalued. That cost of change cannot come for free or governmental subsidies. It requires a stronger commitment on the part of all democratic people who intend to avoid ecological harm by surrendering short-term gains for the long-term mutual wellbeing of their own society, and to initiate a reciprocally altruistic bond to Earth's landscapes and its biodiversity.

In recent years, biodiversity and ecological integrity have emerged as significant arguments based on ecological centrism towards biodiversity protection in global and national levels. Eco-centric arguments, in

term of an intrinsic value-based-approach, place ecological values as a first priority, preserving the health of our planetary system. In cases in which human interests collide with nature, eco-centric arguments will not simply allow human interests to take control over the interests of nature. By understanding natural interests, Fritjof Capra suggests "ecological literary". Before attempting to manage or orchestrate nature, it is important to realize the way in which nature sustains life. Humanity is a property of the Earth's ecosystems, so our survival will be reliant on our knowledge of eco-literary.[1163] Therefore, eco-centric paradigm recognizes that Earth's ecosystem is a subject and human beings are a part of Earth's community.

Up until this point, the anthropocentric paradigm as human-dominator does not support the idea of living in harmony with nature, as well as world peace. It also has been suggested by Johan Galtung (1990) that the pattern of the needs of humankind superseding natural resources can be categorized as a subtype of "structural violence."[1164] So, because of a misconception and possible lack of ecological understanding, world peace may also be out of our reach. While pre-occupied with the survival requirements of humans, such as subsistence agriculture or harvesting that is pushed past the level of wellbeing needs, the pressure, stress and tension of resource exploitation increases.[1165] Galtung points out that this demand changes the status from a "natural harmony of interests" to a "conflict of interest."[1166] Therefore, conflicts could rise to a high concentration of violence, either amongst humans or between humans and nature. Just as Galtung, Laura Westra's eco-violence (2004)[1167] and Polly Higgins's ecocide (2010) describe structural violence in terms of a crime against peace.[1168] Based on Galtung, it can be said that ecological integrity here refers to the condition of "*sine qua non*" for human existence represents the most fundamental value of Earth's systematic sustainability.[1169] If conflicts of interest remain unresolved, it could result in systematic ecological collapse. Therefore, ecosystem integrity corresponds to survival, wellbeing, liberty and identity for all life forms, including basic human needs.

The eco-centric paradigm seeks to live life with a natural harmony. It stands on the ground that humans have the ability to adapt to natural surroundings without upsetting nature. Moreover it strongly recognizes the merits of both ancient and modern religious belief systems and acknowledges the ecological cultures of local and indigenous traditions. This recognition signifies that this paradigm addresses all areas related to natural environmental issues, and involves the participation of all stakeholders involved in biodiversity protection. Within Earth's community all life forms and humans should be considered as equal.

[1163] Fritjof Capra "the New Facts of Life" (7 May 2014) at <www.ecoliteracy.org/essays/new-facts-life>.
[1164] Johan Galtung "Cultural Violence" (1990) *27 Journal of Peace Research* 3, 291 at [291-305].
[1165] Johan Galtung and Fischer Dietrich *Johan Galtung Pioneer of Peace Research* (Springer, Berlin, 2013).
[1166] At 42.
[1167] Laura Westra *Ecoviolence and the Law: Supranational Normative Foundations of Ecocrime* (Tranational Publishers, Ardsley, 2004).
[1168] Higgins, above 207, at [67-68].
[1169] Galtung and Dietrich *Johan Galtung Pioneer of Peace Research,* above n 1165, at [36-38].

Nowadays, eco-centric arguments have been based on ecology, Earth science, eco-philosophy and ecological theology. These disciplines provide eco-wisdoms from the past to today's generations and others yet to come. The same as Mary Midgley who wrote "the idea of Gaia, of life on Earth as a self-sustaining natural system is a powerful tool that could generate solutions to many of our current problems."[1170] Gaia ethical thinking presents an argument based on a new way of looking considering the Earth, for example, in the context of Earth sciences, yet does not reject moral implications.[1171] Here, the basic idea is that the Earth is more like a living organism than an inanimate machine and is comprised of highly complex interacting ecosystems binding together not only the continents, oceans and atmosphere, also its living inhabitants.[1172] Like an organism, Earth is self-renewing, adjusting to changing conditions through feedback loops in order to maintain relative stability between atmosphere and temperature.[1173] In the Gaia sense, Earth does not refer to a mechanism, as it is alive.[1174] The Gaia hypothesis explains the metaphor of viewing the world and all its parts as a machine within an Earth sciences context. The Gaia ethic opens the door for compassion, care and love towards the Earth, not only human survival.[1175]

Like the Cosmocentric approach, the recent insight that the planet Earth and its biosphere are an object of the supreme value that has emerged from cosmological studies.[1176] The Gaia hypothesis images are of Earth from the vantage point of space and in particular, ecological understanding. The central ecological reality for organisms is that all are relative to Earth. None would exist without planet Earth. The mystery and miracle called life is inseparable from Earth's evolutionary history, its composition and processes. Hence, for Midgley, the Gaia ethic moves beyond human sociability or community of life surrounding us, provoking us to cooperate to its inclusive Earth home.[1177] Gaia thinking is motivating other eco-centric arguments. Speaking of a sustainable relationship between humans and Earth, the ethics of the Earth Charter, 2000 represents global values that include all races, cultures, religions and ideological traditions, concerning the preservation of the planetary ecosystem and for justice and peace among the communities of the world. [1178] Similarly, the Earth Manifesto[1179] also recognizes the Earth-centered-argument. Its aim is to extend and deepen people's understanding of the primary life-giving and life-sustaining values of Planet Earth, such as, the biosphere. The Manifesto includes "six core principles" and provides action principles, outlining humanity's duties to Earth and to the geographic ecosystems Earth comprises.[1180] It is offered as a guide to ethical thinking, conduct and social policy as advances

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[1170] Marry Midgley *Gaia: the Next Big Idea* (Demos, London, 2001) at [11-13].
[1171] At 12.
[1172] Chris Beckett, and Silver Donald Cameron *The Gaia Principle: James Lovelock* (San Francisco, California, USA, Kanopy Streaming. 2015).
[1173] Capra, above n 84, at 100.
[1174] At 101.
[1175] Irina Pollard *Bioscience Ethics* (Cambridge University Press, Cambridge, 2009) at [263-265].
[1176] Andrew Bosworth, Napat Chaipradikul, Ming Ming Cheng and others *Ethics and Biodiversity* (UNESCO, Bangkok, 2011) at 15.
[1177] Midgley *Gaia: the Next Big Idea*, above n 1087, at 26.
[1178] Bosselmann and Engel, above 127, at [5-6].
[1179] *Curry Ecological Ethics: An Introduction , above 831, at 112.*
[1180] Cormac Cullinan *Wild Law: A Manifesto for Earth Justice* (2 nd ed., Green Books, Devon, 2011) at [78-84].

have been made in scientific, philosophical and religious attitudes to non-human Nature, over the last century.

Moreover, if our planet is alive, in accordance with Gaia theory, other components of Earth that should be recognized as part of the Earth's system or the Earth's body must merit consideration. These core arguments, developed by Aldo Leopold's Land Ethic, oppose the traditional concept of nature as mechanism. Prior to this, all assertions rested upon the notion that all sentient beings have a value for their own sake. "The land community concept" developed by Aldo Leopold is slightly different, as Leopold expands the subject of intrinsically valuable nature to include ecosystems. Leopold expressed his land's ethics by means of an ecological understanding that viewed ecology as natural energy flows and nutrient cycles among different members of the community of life.[1181] His argument rejects the existing rationale for preserving nature based on human needs and utility, as many biological conservationists believed in the early nineteenth century. At the time of Leopold's argument, conservation management in the United States of America was influenced by "reductionism," the view that effective understanding of a real, complex system can be achieved by investigating the properties of its isolated parts. [1182] As the reductionist methodology for park conservation had a small-scale focus (individual parts), as a result, reductive conservation management and policies are not suitable for the natural environment as a whole system.[1183]

Drawing on emerging ecological science, in his Article "Thinking like a Mountain", Leopold challenges the biological reductionists to shape their thinking around the natural environment. He does not ask them to think about mountains, nor does he exhort them to analyze a mountain, its veins of rock and mineral or its flora and fauna. Leopold urges the conservationists to think and feel like "a mountain." This story begins with the deer and the wolf. While the deer in the National Park fears the wolf, the mountain fears the deer. A park's management may have the policy of getting rid of the wolf to protect the deer for game hunting. Consequently, after a significant increase in the deer population, not only do they consume all the ground vegetables and grass that cover the mountain's surface, they also ruin mountain ecosystems. Since the integrity of the mountain ecosystem has been compromised, the population of deer will also steadily decrease. When the deer disappears from the mountains, no hunter comes to town to hunt the deer anymore.[1184] As a result, in addition to losing its ecosystems, the town loses the benefit of selling licenses to hunters.

Leopold's argument attempts to move anthropocentric ethics away from a conservationist mentality wherein humans play a God-like role and regard nature as a collection of resources or raw materials for

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[1181] Leopold Aldo *A Sand County Almanac and Sketches Here and There* (Oxford University Press, 1989).
[1182] Bosselmann "Losing the Forest for the Trees: Environmental Reductionism" ,above 516, at [2424-2448].
[1183] At [2425-2426].
[1184] Susan L. Flader *Thinking Like a Mountain: Aldo Leopold and the Evolution of an Ecological Attitude toward Deer, Wolves, and Forests* (University of Wisconsin Press, Baltimore, 2000) at [1-35].

development. In terms of 'respect and trust,' humans are part of the community of land and not the central part of the biosphere. Leopold writes,

> "We must begin to realize our symbiotic relationship to Earth so that we value 'the land' or biotic community for its own sake. We must come to see ourselves, not as conquerors of the land but rather, as plain members and citizens of the biotic community.[1185]

In short 'do not play God's role, just be a part of them, understand them'. Leopold further states,

> "It is inconceivable to me that an ethical relation to land can exist without love, respect, and admiration for land, and a high regard for its value. By value, I of course mean something far broader than mere economic value; I mean value in the philosophical sense."[1186]

Here, Leopold denotes or intends to convey value in the philosophical sense rather than economic context, the intrinsic value of community of all life forms and concludes that the human community is a part of the natural community. Therefore, eco-centric arguments prioritize protecting the Earth's community as a whole regardless of individual protection thereby affirming that biodiversity has its own value for its own sake. At this point, for Leopold, "Conservation (is) as a Moral Issue"[1187] it is important to realize that biodiversity protection/conservation is not only involved with economic issues there are also moral issues involved.

Renewable relationship between humans and Earth requires more than the traditionally anthropocentric social contract. In contrast, eco-covenantalism re-captures the said relationship in a solemn commitment related to natural protection that has been embedded in the belief system in several societies. So, even as it can be described as a way of self-moral governance, it is also legal governance that requires members of society to take further actions to protect their own biodiversity beyond normative daily life, recognizing the existence of Earth as well as universal responsibilities to ecological welfare in common. More importantly, eco-covenantalism constitutes eco-consciousness such as care and respect for natural environment. Since the bond with nature is created, ecological mind can guide us to conduct self-performance without legal contract or law enforcement, to avoid polluting the river will be performed by self-action voluntarily rather than obtained by power or the force of law.

Since the discovery of fire and the invention of technology, Homo sapiens have become the only one species that have the capability to modify the environment. Environmental modifications can refer to different names, such as, human civilization, modernity and standard of living. The consequences of this ability more recently have turned to climate change and other environmental problems. On the other hand, humankind with the same capacity has created a way to live peacefully with natural energy. Without upsetting that energy, they create supreme symbols via a variety of names and preserve

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[1185] Aldo Leopold "Ecocentrism: The Land Ethic" in Pojman P. Louis (ed) *Environmental Ethics: Reading in Theory and Application* (4th ed., Thomson & Wadsworth, Belmont, 2005) at 140.
[1186] Baird J. Callicott "Conservation Values and Ethics" in Martha J. Groom, Gary K. Meffe, and Ronald C. Carroll (eds) *Principles of Conservation Biology* (3rd ed., Sinauer Associates, Sunderland, 2006) at 111.
[1187] Callicott, above n 12, at 308.

sacredness to protect the way of living with nature. Although this cosmic power is referred to in different languages, it similarly asserts, affirms and emphasizes the natural force. This supreme power has been captured in a legal sense as the *force majeure* (Act of God). Others have practiced it in many traditional belief systems.

Ecologists however speak of supreme symbols in the language of science, so the law of naturalness may be expressed only in ecological terms. For others who may not be interested in ecology or biogeochemical cycles in scientific terms, the implications of belief systems relating to ecological issues may become a proper message. At this point, religious myths, moral and ethical systems are intertwined with an understanding of the human-natural relationship. Speaking of the religious community, they may understand ecology as a commitment or belief in the spirit of Nature, or in relation to Mother Earth. Or some may see the human-natural relationship as moral rules that govern human's behaviors. Eco-wisdoms can be found in communities all over the world. For example, the moral of Aesop's story of the boys and the frogs found in the German language as *"quäle nie ein tier zum scherz denn es fühlt wie du den schmerz"*[1188] (never torment an animal for fun, because it feels the pain like you) shares ethical consciousness with the Buddhist's moral practice (avoiding to kill the animals). Some rules are kept in terms of regular practices. Other may appear in the form of an oath, a vow to the supreme symbols based on their beliefs towards the natural environment surrounding them. Although the way of practicing might be different depending on geology and other circumstances, the key point is relevant to the welfare of the community. So, those promises that people commit to the supreme symbols can be recognized as a source of eco-centric covenantalism. Therefore, it is the eco-covenantal relationship that ties humans to sacred nature via all supreme symbols. By establishing covenants, earlier human societies adopted the way in which all members had the ability to communicate with each other to share sacred values from common goods without jeopardizing or upsetting such values. Sacred mountains, lands and rivers were preserved and maintained for all members in such a way.

Whether covenant is used interchangeably with other terms such as certain promise, solemn commitment or oath, they can be found universally all through religious belief systems. It is due to their promise to uphold their fundamental beliefs that people all over the world pledge to their faith in their supreme symbols of their own beliefs. From the Christian perspective, covenant is described as a word of power.[1189] Edward Farley stated with respect to "words of power; they are the deep and enduring symbols that shape the values of a society and guide the life of faith, morality, and action, are subject to powerful forces of discreditation and even disenchantment."[1190] Covenant binds humans to the Mighty Nature based on religious belief systems. This concept has been found all over the world. In the Latin root

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[1188] Eric Chivian and Bernstein Aaron (eds) *Sustaining Life: How Human Health Depends on Biodiversity* (Oxford University Press, Oxford, 2008) at 175.
[1189] Edward Farley *Deep Symbols: Their Postmodern Effacement and Reclamation* (Trinity Press, Valley Forge,1996) at [1-2].
[1190] At 2.

the term, covenant, is referred to *'convenire,'* meaning, 'to agree.' From the Middle English to the Old French periods, 'covenant' referred to 'convene', a synonym for assemble, cluster, collect, congregate, converge, together, gather, and meet.[1191] The Greek word διαθηκη (*diatheke or syntheke*) translates into English as "covenant" and is a legal term denoting a formal and legal-binding declaration of benefits to be given by one party to another, with or without conditions attached.[1192] In Hebrew the ברי (*berith, berit*) also translates into "covenant"[1193] in English and may derive from an Akkadian (Babylonian) word '*biritu'* which means to 'fetter' or 'to bond.' The term *berith* in Hebrew is sometimes also more in the nature of a one-sided promise or grant.[1194] In a religious organization, covenant refers to a solemn oath that gives force to the covenant, and is used in a similar sense.[1195] In the Quran covenant appears as *mithaquan* (Q. 4.20).[1196] In the Old Testament, covenant is used to describe a binding relationship that is based on commitment carrying with it promises and obligations which have a quality of constancy or durability.[1197]

Regarding religious and cultural perspectives, humans-natural relations have still remained in covenants that are held by humans in a faithful and trusting relationship with their supreme symbols. The concept of covenant remained in the ritual practices of the church, such as the sacrament of marriage, and in confessional beliefs and theologies.[1198] The concept of covenant is strongly related to the Abrahamic religions, Judaism, Christianity, and Islam that are linked to cultural and traditional beliefs.[1199] In Christianity, the covenantal tradition entails the legal binding based on biblical faith that is extended to all of Creation.[1200] Humans as custodians commit to protect the Kingdom of God.[1201] In Islam, humans as vice-regents are committed to Allah on Earth in possessing particular privileges, responsibilities, and obligations to God's creation.[1202] For Hinduism, solemn commitment to the sacred Dharma is a binding or obligatory duty of Hindus.[1203] In Theravada Buddhism, covenant can be referred as to *Sat-Ja*, (*สัจจะ, Sat-Ja,* truthfulness commitment) which is founded in the dialogues of the Ten-Parami (stories of the past lives of Buddha, the Bodhisattva.)[1204] It can be noticed in Thai's *Sangha* (monk) organization (*Sangha,*

[1191] Bosselmann, Engel, and Taylor, above n 126, at 50.
[1192] Michael Marlowe "Covenant (ברית / διαθηκη)" (25 December 2013) Bible Research Internet Resources for Students of Scripture <www.bible-researcher.com/covenant.html>.
[1193] Weber Hans-Ruedi "Covenanting in the Bible" in Lewis S. Mudge and Thomas Wieser *Democratic Contracts for Sustainable and Caring Societies* (WCC Publication, Geneva, 2000) at [100-102].
[1194] At 101.
[1195] At 102.
[1196] John Witte Jr. *God's Joust, God's Justice: Law and Religion in the Western Tradition* (Wm. B. Eerdmans Publishing Co, Michigan, 2006) at [373-374].
[1197] At 374.
[1198] Ronald J. Engel "A Covenant Model of Global Ethics" (2004) *8 Worldviews: Global Religions, Culture, and Ecology 1* at [29-46].
[1199] At 32.
[1200] At 33.
[1201] Ian Bradley *God is Green*: *Christianity and the Environment* (Darton, Longman and Todd Ltd, Darton, 1990) at [12-33].
[1202] Arthure Saniotis "Nature as an Expression of Tawhid (Divine Unity): Islam and Ecology" in Denis Edwards, Mark Worthing (eds) *Biodiversity & ecology as Interdisciplinary Challenge* (ATF Press, Adelaide, 2004) at [101-108].
[1203] Pankaj Jain Dharma and Ecology of Hindu Communities Sustenance and Sustainability (Asgate Pub, Farnham, 2011) at [14-18].; Kewal Motwani *India: a Systhesis of Cultures* (Thacker, Bombay,1947) at [110-111],]166-167].
[1204] Kinsley R. David, above n 779, at [88-89].

คณะสงฆ์) conveys the solemn truthful commitment as a discipline rule called *Vinayapiatka.*[1205] It is true that society cannot force its members to carry out and follow up on all of the promises/commitments they may make. Effectiveness of covenantal governance must depend on a way in which society establishes procedures to warrant the promises. As we discussed, this governance needs to rely on a system of sacred beliefs. At this point, it signifies the sacredness of the Earth that is found as common ground in several societies from ancient to contemporary times. At the earlier development, those measurements are closely related to religious/traditional beliefs in performance by vows or oaths to supreme symbols. In the traditional Buddhist belief system, the oaths are a provisional self-enforcement responding to the Law of *Karma* (cause and effect) in which those who promise bear his/her accountability for their own actions. The defaults tend to constitute the legal form that binds the promise. The example can be seen in the five-basic-precepts (as mentioned below). In this case, the relationship between humans and sacred nature will be passed on from generation to generation in a form of covenant. Hence, Earth has remained sacred and respected.

6.3 Earth Jurisprudence and the Great Law

The characteristics of eco-centric covenantalism in terms of promoting the protecting of Earth and its aspects can be recognized under the concept of Earth Jurisprudence. In the Great Work published in 1999, Thomas Berry called for a new jurisprudence to redefine the human-natural relationship. According to Berry, the legal traditions of environmental jurisprudence represent anthropocentricism, emphasizing the individual rights of humans towards the community of life forms as their existence for serving human interests.[1206] This jurisprudence supports industrials, commercials, and trades in relation to natural resources without limitation. He criticized that the present legal system "is supporting exploitation rather than protecting the natural world from destruction by a relentless industrial economy."[1207] In association with the human paradigm, the natural community has not obtained any rights for its own sake. Thomas Berry as cited in Burdon Peter stated that the theory of Earth jurisprudence positions the concept of Earth's community at the highest priority beyond the anthropocentric legal jurisprudence.[1208] Berry advocates that the legal status of Nature needs to be recognized. The interdependence between the human community and the community of life is defined by Earth jurisprudence as a mutually dependent relationship, rather than resources or property. At this point, Nature itself can enhance human wellbeing if such reciprocal relationship is fully preserved and treated in a manner of sustainability.

The dignity of Nature is subject to legal rights linking to Earth jurisprudence. It will ensure that mutually dependent relations between humans and community of life will be regarded and cared for with all due

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[1205] David Landis Barnhill "Great Earth Sangha: Gary Snyder's View of Nature as Community" in Mary Evelyn Tucker and Duncan Ryuken Williams *Buddhism and Ecology: The Interconnection of Dharma and Deeds* (Harvard University Press, Cambridge, 1997) at [187-188].
[1206] Burdon, above n 137, at [132-133].
[1207] At 132.
[1208] Berry "Ten Principles for Jurisprudence Revision" above n 349, at 144.

legal respect. Whilst Earth is entitled the legal right, humans are placed with responsibility. Earth jurisprudence redefined the human-relationship as a framework of legal value places human's responsibility into the fundamental position (not higher than nature). Speaking of the dignity of Nature, it derives from its intrinsic values, which is recognized in the Biodiversity Convention.[1209] And the term, "other forms of life on Earth," can be found throughout the UN documents such as the World Charter for Nature since 1982.[1210] The 1992 Rio Declaration called for the international community "to conserve, protect and restore the health and integrity of the Earth's ecosystem" as a common responsibility.[1211] Thus, if the rights of humans place human-ownership of Earth, or if the state sovereignty claims state property rights over the land, sky, sea, and life forms over and beneath it, such rights also place the responsibility to them all.

6.4 Rights of Nature (Rights of Mother Earth, *Pachamama)*

Arguably, the question of the way such rights of Nature are derived can be answered in terms of the same rational sense as the way human rights are derived. Humans represent an integral part of the natural community. Our evolutionary process has emerged after Earth existed. In the language of Berry, "rights originate where existence originates. That which determines existence determines rights."[1212] So, the natural world has inherent rights that come with existence itself. Such rights emerge from the same source wherein humanity obtains the rights of humans, from the original universe that creates them into being.[1213] In Berry's legal sense, the rights of Nature are not stated simply in application to the traditionally theoretical conception of nature's right based on "state of nature." In fact, such rights are reliable as they pertain to ecological and Earth sciences, rather than a theoretical justification of presumption only. It is complex and complicated as is the law of ecological hierarchy. Every life form in the natural world has what could be considered to be their own role, even if they do not have an equal standing compared with humans. As Berry stated that

> "All rights in nonliving form are role-specific; rights in living form are specie-specific and limited. Rivers have river rights, Birds have bird rights, and Insects have insect rights. Humans have human rights. Difference in rights is qualitative, not quantitative. The rights of an insect would be of no value to a tree or a fish."[1214]

Unlike Thomas Aquinas of Natural Law, Berry suggested "the Great Law" is concerned with the physical environment based on the concept of the Earth's community, rather than human's reasonability alone.[1215] He used the word "Great" to emphasize a sacred sense that could put the Great Law at a higher status than other laws that humans create. So, this law of naturalness transcends the human law such as

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[1209] CBD, at Preamble.
[1210] *World Charter for Nature*, GA Res. 37/7, UN Doc. A/37/51 (1982).
[1211] *Rio Declaration on Environment and Development*, UN Doc. A/CONF.151/26 (1992).
[1212] Berry, above n 59, at [149-150].
[1213] At 149.
[1214] At 150.
[1215] Mary Evelyn Tucker and Ducan Ryuken Williams *Buddhism and Ecology: the Interconnection of Dharma and Deeds* (Harvard University Press, Cambridge, 1997) at [19-20].

property law. For Berry, human society exists under the Earth governance as a single community. The law that humans create should be accompanied with the supremacy of the Great Law.[1216]

Therefore, the rights of Nature are not granted by humans, such rights already exist by the Great Law, so recognition by humans is required. Speaking of the rights granted by the Great Law, the closest legal recognition in common legal system can be compared as "a negative right".[1217] Regarding environmental problems based on property and tort law, the establishment of negative rights establish against the interference such as rights not to be disturbed and rights to be free from harms.[1218] Negative rights demand protection, in other words, with respect to humankind the rights of Nature come with duties and responsibilities.

In terms of biotic resources and exploitation, the rights of Nature serve as reminders of the rights of human's development over the Earth's biodiversity. They are no longer un-limited based on human's satisfaction of material desires rather they are constrained by the said rights of the Great Law. In the strict sense of legal values in terms of right and duty, the entity of Earth is transformed from object status to subject status of the right-holder.[1219] Earth as a right-holder has a duty to maintain and supply all ecological functions (such as biogeochemical cycles) based on her capacity to support human society. In return, Earth and all of her elements have gained the legal respect that requires a specific justification for every action affecting her integrity. At this point, building a dam blocking the international river, destroying a species causing its extinction or habitat degradation affecting loss of biodiversity that cause significant impacts to the ecological integrity of Earth are no longer only jeopardizing anthropocentric concerns, those actions could be considered as a legal rights violation.[1220] By acknowledging the Great Law, it is important that rights of nature should be recognized in national constitutions to guarantee its judicial protection. Humans create rights to release GHGs to the atmosphere or property rights over animals and other life forms for use in a laboratory based on our interests. Legitimately, those rights have to respect the rights of nature. Therefore, property rights give humans an ownership over nature equal with the responsibility for looking after nature by not polluting or contaminating the Mother Earth.

The example of Rights of Mother Earth, *Pachamama* can be clearly seen in the constitution of Ecuador as in Article 71 stated that:

[1216] At 20.
[1217] J.B. Ruhl, Steven E. Kraft and Christopher L. Lant *the Law and Policy of Ecosystem Services* (Island Press, Washington , 2007) at [107-108].
[1218] At 108.
[1219] Susan Emmenegger and Axel Tschentscher "Taking Nature's Rights Seriously: The Long Way to Biocentrism in Environmental Law" (1994) *6 Georgetown IE Law Review* 3, at [545-742].
[1220] At 572.

> "Nature, or Pacha Mama, where life is reproduced and occurs, has the right to integral respect for its existence and for the maintenance and regeneration of its life cycles, structures, functions and evolutionary processes."[1221]

The Ecuadorian Constitution has recognized Rights of Nature as a right-holder and it is protected by the constitution. Because Mother Earth's rights are inherent, it does not place positive rights to humans rather it places negative rights. This legal concept is clear that instead of treating Mother Earth as human's property/commodity under the property law, Rights of Nature places ecological responsibilities to Ecuador's citizens to enforce such rights on behalf of Mother Earth. By sustaining ecological functions of the forestlands or wilderness areas, property rights over nature elements will be limited. Therefore, the constitution mandates state's obligation subject to the duty to maintain a healthy environment by determining the methodology of balance between humans and natural interests or in other words ecological sustainability. Whilst codifying the said rights in the constitution, we can ensure that the rights of nature are constitutionally certified successfully as well as guaranteeing the duty must be performed.

6.5 What is the Ecological Covenant Approach?

Eco-covenant refers to an agreement created by solemn commitment, responsibility, obligation and fidelity, and is held in a trust with the naturally sacred value as witnessed by all supreme symbols found throughout a range of traditional religious belief systems. Thus, the eco-covenant is theoretically based on mutual restraint that avoids harming all life forms and Earth. The eco-covenantal agreement considers that biodiversity must be treated with respect and care as it is a part of the larger living planetary and has intrinsic values on its own. This value is also recognized by treaty law. And essentially eco-covenant as a moral obligation of humans, in terms of achievement, should be codified in a supreme form of agreement.

The eco-covenant approach has signified the mutual-restraint rather than mutual benefit agreement. In domestic practice, the Netherland government implemented the term "covenant" as agreement between national and other groups such as local environmental regulators, agricultural sectors, corporations, and so forth to create an ecologically sound measurement.[1222] It has been stated that covenant doctrine as "environmental agreement" can be commonly found in the environmental legal system of the Netherlands.[1223] Rene Seerden suggests that the Dutch environmental agreements are commonly termed as "environment covenants *(milieuconvenanten)*."[1224] In the Flemish region (Belgium and the Netherlands), the covenant doctrine is recognized as agreement, playing an essential role to environmental agreements. Michael Faure points out that rather than the contract-based agreement that

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[1221] See, Constitution of Republic of Ecuador(Walsh A. Edmund, 2008) : Political Database of the Americas at <http://pdba.georgetown.edu/Constitutions/Ecuador/english08.html>; See also, Vernon Teva "Resisting Enclosure: the emergence of ethno-ecological governance in a comparative study of Venezuela, Ecuador, and Bolivia" (LLM Thesis, University of Auckland, 2010).
[1222] Gismondi, above n 61, at 34.
[1223] Orts and Deketelaere *Environmental Contracts: Comparative Approaches to Regulatory Innovation in the United States and Europe* above n 62, at [1-35].
[1224] Seerden, above n 63, at [179-195].

can easily be withdrawn, environmental covenant guarantees non-negotiation.[1225] This means the negotiated rule/law-makers based on tradeoff incentives could hardly terminate the core principles of biodiversity and environmental protection.

In Western culture, covenant agreement is grounded on mutual restraint by not causing harm/s to the Promised Land. The original route relates to traditional belief systems and religious naturalism.[1226] From this perspective, the sacredness of the term "covenant" combined with ecological notion referred to as "the ecological covenant" is described by eco-theologians to explain the solemn commitment expressed with the highest spiritual beliefs.[1227]

As mentioned, "covenant of life" refers to those relationships between human existence and ecological integrity within the Earth community.[1228] Ronald Engel points out that the covenant notion has co-existed in consistence with human civilization throughout human history. People create promises that bind their relationship together prior to the written contract. Everyone has formed a bond of covenant with one another, for instance the relationship between bride and groom in married covenant or relationship between parents and child. In terms of climate crisis, no covenants or heroic efforts will be able to save us from Earth without life or the unhealthy Earth with toxic contamination in air and water, and desert lands. [1229] No one wants to live in the empty Earth. Engel states that "the covenant that sustains us"[1230] is the "covenant of life."[1231] Humans as Homo sapiens are covenanted to the natural reality and every society makes a promise with the natural world in a similar way. For example, we want our land to be plentiful with life, crops in the field; fish in the rivers, so protecting natural fertility is one of the covenants of life. Climate change or natural disasters could be a signal of covenantal violation, so any society bears its own responsibility for its' own sake. He further describes that although "we have made covenants with God, the ultimate source of existence, yet have rarely made covenants with nature itself, with the living flesh of our bodies, with generations past and generations to come, with all those who have labored to sustain Earth's evolution and build a world community, with the great encompassing circles of life."[1232]

It is important to note that it is necessary to shift traditional covenant to eco-covenant and as can be noted that while Engel's critics suggest that Elazar's covenant can be an ideal model, it is not sufficient to capture the aspects of eco-centrism.[1233] Engel points out that there is a difference between the covenant

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[1225] Faure, above n 64, at [167-177].
[1226] Bernard, above n 43, at 167.
[1227] Ronald J. Engel "Property: Faustian Pact or New Covenant with Earth?" in David Grinlinton and Prue Taylor (eds) in *Property Rights and Sustainability*: *The evolution of Property Rights to Meet Ecological Challenges* (Martnus Nijhoff, Leiden, 2011) at [66-67].
[1228] Engel, above n 45, at [290-291].
[1229] At 290.
[1230] At 291.
[1231] At 291.
[1232] At 291.
[1233] Ronald J. Engel "A covenant model of global ethics" (2004) 8 *Worldviews: Global Religions, Culture, and Ecology* 1, at 33.

of Creation and the traditional history of covenant.[1234] This is because the traditional covenant is absent of some ecological elements such as the concept of the gift of nature and entrustment positions, so while Elazar's traditional covenant is close, it is not quite exactly Engel's covenant of life. Additionally, Engel's 'covenant of life' is green as it is adopted from traditional orthodox covenant. This green covenantal foundation comprises fourteen characters including (1) the sacred reality of life, (2) the response of gratitude, reverence, and love, (3) mutual entrustment, (4) trust, (5) promise, (6) comprehensive ethical principles, purposes, virtues, and laws, (7) the common good, (8) self-rule and self-limitation, (9) dialogue, (10) new beginning, (11) reconciliation (12) power (13) a covenantal people, and (14) federalism.[1235] With these 14 characters, the outcome leads to "democratic ecological covenants." He proposes a thesis of "a new covenant with Earth," which holds the commitment of humanity to protect and restore the integrity of our planet home.[1236] This is important because eco-covenant does not view Earth and other life forms as a common enemy of humanity based on Hobbes's image.

Throughout the past century, based on international social contracts the intrinsic value of the earth's biodiversity commons has been viewed under the instruction of the anthropocentric concept of instrumental value. Because those natural commons are lacking use-values, such issues and matters are not of particular concern. The consequence has led in the direction of fragmentation, omissions of occurrence/performance or failures to perform certain duties or expected actions. The covenant power of trust doctrines among nation states has been declining due to the economic competition that is promoted by neo-liberalism. As time has gone by, there are no more promises as consideration.[1237] Regarding secular-anthropocentric legal positivism, the nature/human relationship has relied on the concept of contract theory and compact that link property law to human interests only. Environmental and natural resource laws have accepted property and contract law as a means for allocating rights and duties among the human community grounding them on their own benefits. Speaking in terms of the human paradigm, social contracts are those allocating rights and duties for natural resources or land arrangement said to have been signed among human individuals

In contrast, it has been argued throughout this work that anthropocentric social contract devalues the dignity of life and Earth, grounding on the traditional familial social concept against Nature.[1238] Addressing and taking into account ecological covenantalism, it is necessary for the dignity of 'the Mother Earth' to be recognized as much as human dignity, so *her* rights must be a subject, rather than an object of

[1234] At 33.
[1235] Bosselmann, Engel, and Taylor, above n 126, at [55-59].
[1236] Engel "Property: Faustian Pact or New Covenant with Earth?" above n 1227, at [65-67].
[1237] Arthur Corbin "Non-Binding Promises as Consideration" (1926) 26 *Colum. L. Rev*. 550, at [550-558].
[1238] Callicott, above n 12, at [240-243], 264.

anthropocentric regime.[1239] Scholars such as Thomas Berry and others point out the new jurisprudence such as Earth Jurisprudence,[1240] Wild Law and Earth Law,[1241] and so forth.[1242]

However, those commitments to respect, care, and take up and accept responsibility for sacred Earth must be protected in a form of covenant. The concept of ecological covenant can fill in the gap of those theories. The renewable commitment to Nature can be found in France in the French philosopher Michel Serres who wrote *Le Contrat Naturel* in 1990 (*the Natural Contract*, 1995). Contract of Nature was a bond experience shared between people or groups and forms a connection between them, by human activities (war and peace) that served as a contract to the natural environment since the time of the industrial revolution. The work of Serres reminds us of the following; "humans have abandoned the bond that connects us to the world...the bond that relates the social sciences to the sciences of the universe, law to nature, so we can no longer neglect this bond."[1243] According to this statement, although Serres mentions or states the word 'contract', it does not signify the humanistic social contract.[1244] The bond closely refers to the concept of covenant. In terms of and speaking about the concept of Earth-based-centre movement, the human legal paradigm now completely dominates Earth sovereignty by satisfying our environmental needs without respect for the way in which it affects the sacred natural reality. The negative consequences of ignorance regarding the rules of naturalness can be seen in terms of climate change, wildfires, biodiversity loss, and ecosystem decline among others. In regard to the Natural Contract, Michel Serres advocates the term a 'contract' of symbiosis to describe the way in which Earth and human relate in terms of "parasite contract."[1245] At this point, Earth as a host gives all yet receives nothing in return. On the other hand, the parasite takes all but gives nothing.[1246] Serres says due to environment harms caused by humans, Nature should have a legal claim based on the natural contact.[1247] However, it was criticized by Latour that Serres's view of Nature was too bound with modernism based on Hobbes's state of nature.[1248]

Unlike the Serres's Natural Contract, eco-covenantal approach does not deny eco-wisdoms that originate from the belief systems, rather joins them together as sacred nature that could be agreed upon as a common ground. Hence, all human beings will have their own rights to choose to commit themselves to their Supreme Symbols in which they lay their faith on. In regard to the transformative aspect from treaty

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[1239] Barlow Maude, Biggs Shannon, Cullinan Cormac, and others "Does Nature Have Rights? Transforming Grassroots Organizing to Protect People and the Planet" (7 July 2014) the Council of Canadian, Fundacion Pachamama, and Global Exchange, 2010.
[1240] Berry, above n 349, at [149-150].
[1241] Peter D. Burdon "Earth Jurisprudence and the project of Earth Democracy" in Michelle Maloney and Peter Burdon (eds) *Wild Law in Practice* (Routledge, Abingdon, 2014), at [19-30].
[1242] Peter Horsley "Property Rights Viewed from Emerging Relation Perspective" in David Grinlinton and Prue Taylor (eds.) *Property Right and Sustainability* (Martinus Nijhoff, Leiden, 2011) at [99-101].
[1243] Michel Serres *The Natural Contract* (University of Michigan Press: Ann Arbor, 1995) at 48.
[1244] Callicott, above n 12, at 243.
[1245] Serres *The Natural Contract* above n 1160, at 36.
[1246] At 38.
[1247] Callicott, above n 12, at 246.
[1248] At 247.

based contract to global governance for sustainability, the ecological covenantalism views nation states as a part of the Earth sovereignty. Eco-covenant agreement joins all global citizens together across boundaries, races, gender, and so forth. The concept aims to increase the global responsibility of nation states and humanity to Earth. Instead of claiming the absolute sovereign rights to exploit the Earth's biodiversity commons or absolute private property, it suggests sovereignty as trusteeship for Earth, grounded on the principle of sustainability. Sovereignty as trusteeship is said to offer a new solution, a new way forward from the traditional-paradigm of Westphalia sovereignty that nation states make the decision and control their citizens. Given the rise of the global environmental problems, global governance calls for universal responsibility, rather than individual rights. The aspect could create the paradigm shift from state-based-centric to global governance involving business and civil societies. As regards the big picture, the global governance for sustainability holds the integrity of Earth's ecosystem as a core essential to be protected in a covenant of trust and care for all life forms and humanity.

6.6 Importance of the Earth Charter as the Framework of Eco-Covenants

Unlike the anthropocentric social contract/compact, and the theological covenant, eco-centric covenantalism applies ecological virtuous ethics and wisdoms to achieve ecological sustainability based on the best scientific knowledge and research available such as planetary sciences and eco-literacy. The result may advocate environmental legal theorists on a domestic and international level to constitute an eco-covenant agreement based on common interest(s) and responsibilities. This particular agreement is not about choices to choose because preventing the loss of the earth biodiversity is a common heritage of humankind that depends on a responsible performance. The guidelines to take action are included in the Earth Charter initiative. The Charter includes international legal rules/norms, moral norms, social and economic justice in a framework of eco-covenantal principles beyond the UN Global Compact Governance model. On an international level, the Earth Charter is currently growing in maturity, so it has been adopted in the Scandinavian countries (the Flemish region) and several NGOs. As a "people's treaty", the Earth Charter has been stated beyond the limitations of bloodline, religious belief, ethnicity, and nation.[1249]

At the global level, the Earth Charter is an international document based on covenantal notion that has been developed from cross-cultural philosophies, international norms and principles.[1250] Importantly, the Charter represents a global ethical framework with international legal norms consisting of values and principles to enable and empower ecological justice, sustainability, and peacefulness for the human community with Earth.[1251] The document does not aim for the pro-rights of humankind, nor is it against

[1249] Ronald J. Engel "The Earth Charter as a New Covenant for Democracy" in Klaus Bosselmann and Ronald J. Engel (eds) *The Earth Charter: A framework for global governance* (KIT Publishers, Amsterdam, 2010) at [33-35]; Maximo Kalaw "A People's Earth Charter" in Felix Dodds (ed) *Earth Summit 2002* (Earthscan, London, 2002) at [87-89].
[1250] Engel, above n 1150, at [31-32].
[1251] At 31.

human rights rather it stands on behalf of Earth in justice for the whole community of life. The legitimacy of the real function of the word "justice" should not take sides as to whether the issues have to do with human beings or non-humans rather it stands firmly in accordance with the natural reality. Presently, humankind as society has dominated the planet in size and scale, so there are no longer available lands to occupy or abundance of natural resources to exploit freely without constraints.

Moral responsibility to the planetary boundaries is a key of the Earth Charter that must be guaranteed by the covenantal agreement. This moral force recovering the biosphere has gone beyond the human sphere. It emerges by recognition of the intrinsic values of Nature and the anthropocentric paradigm is required to establish accountability by demonstrating concern for all natural elements.[1252] The Charter places the moral duty to human beings based on trusteeship to prevent the community of life from harm according to ecological justice. At this point, the role of justice does not necessarily refer to equality, nor fairness among different states or humans alone, rather its role expands to cover non-human beings based on a way of naturalness.[1253] Thus, that is the reason the Charter consists of ecological integrity, social justice, democracy, and peace grounded on protection for the community of life of the Earth. The Charter holds the integrity of the Earth in trust of humanity as a whole. Responsible community represents as a preventer who commits themselves to the covenant of the Earth with respect and carefulness. As a result, the moral responsibility of the planet Earth stands still as a fundamental principle underlying the other norms or principles. In practice, the Charter was officially recognized at the World Summit on Sustainable Development in Johannesburg 2002. As a people-based centre development, the Chapter was mentioned as "the healthy development".[1254] The Charter was adopted by virtue of a diversity of international and national associations. The Netherlands government implemented the Charter with the term "covenant" as agreement between national and other groups such as local environmental regulators, agricultural sectors, corporations, and so forth to create an ecologically sound measurement.[1255]

The Earth Charter attempts to shift the traditional human paradigm by highlighting the Earth's ecological integrity as a core concern of global sustainable community. The term "universal responsibility" provides an obligation into all kinds of human activities that could have a negative impact on the Earth's community. The sense of responsibility is acknowledged in the term "care of the community of Life". Everyone shares responsibility for *Mother Earth*. Furthermore, the Charter puts "compassion and love" to all creatures in Earth's community.[1256] The significance of this is that as all life forms have an ecological interaction in the community of life, they must be protected. They work to sustain the wellbeing of the said community. Moreover, all of the people who live in the same community have the duty and obligation to

[1252] Bosselmann, above 344, at [52-55].
[1253] Bosselmann, above n 284, at [80-81].
[1254] *UN Report of the World Summit on Sustainable Development* UNA/CONF.199/20 (2002) at 156.
[1255] Gismondi, above n 61, at 34.
[1256] The Earth Charter, at Principle I.

preserve the integrity and purity of that natural environment as much as possible so that this natural heritage would pass onto the coming generations. Humankind's sovereignty exists with this great responsibility. Since we create our rights to manage and exploit the Earth's biodiversity for our own interests, those accepted rights extend with the duty to prevent negative impact to nature. Moreover, the Charter promotes four main principles (1) “Respect and Care for the Community of Life"; (2) "Ecological Integrity"; (3) "Social and Economic Justice"; and (4) "Democracy, Non-Violence and Peace."[1257] The Earth Charter is desired to strike a balance between the anthropocentric and the eco-centric worldview in the language of modern ecology and Earth sciences. On the other hand it is relevant in terms of the ecological wisdom of the world's religious and traditional and cultural beliefs, in particular, to those of indigenous communities.[1258]

Among these key principles and sub-principles of the Charter, it means to capture a deeper sense of ecological concerns than other the typical natural resource agreements. For example, the principle of the "interdependence of the community of life" elicits Earth and all its components in respect and care as having a vitality of its own and being integrally linked to the common welfare of all communities.[1259] It is not limited for human exploitation only. Whilst human community constitutes interactions to Earth in every instance, any opportunities should be spared to its natural recovery to replenish itself. The commentator has been pointing out that "ecological integrity" is a comprehensive principle of the Earth Charter that distinguishes it from other ethical codes. The term "protect and restore the integrity of Earth's ecological system" has been recognized in Principle 7 of the 1992 Rio declaration, leading to "common but differentiated responsibilities" found in the Climate Change convention to protect the global commons. A "precautionary approach" is required while facing a limitation of the scientific method to prevent harm. "Ecological sustainability" is also recognized in the Charter. As a character of eco-centric covenantalism, the Earth Charter will become a significant source of the eco-constitution law for global biodiversity governance. The growing concerns of covenantal paradigm as transformation for anthropocentric social contract have been discussed over the last decade.[1260]

In the period over the past decade, there is an argument that the Earth Charter does not hold a legal status, nor yet even qualifies as a soft law document. However, its value has gone beyond such critics. As Nicholas Robinson points out the Earth Charter principles of ecological integrity have been already applied in domestic jurisprudence to protect the environmental right to be balanced and healthful eco-systems in a case of forest licensing in the Philippines (The Supreme Court of the Philippines in Oposa v. Factoran).[1261] Unlike other individual groups of law making or other voluntary codes, the Charter

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[1257] At Principle I/2.
[1258] At principle III/12.
[1259] Corcoran, Vilela and Roerink *The Earth Charter in Action: Toward a Sustainable World* above 60.
[1260] Klaus Bosselmann "Outlook: the Earth Charter a Model Constitution for the World?" in Bosselman Klaus and Ronald J. Engel*The Earth Charter: Framework for global governance* (KIT press, Amsterdam, 2010) at [246-249].
[1261]Nicholas A. Robinson "Foreword” in Klaus Bosselmann and Ronald J. Engel (eds) *The Earth Charter: A framework for global government*, (KIT Publishers, Amsterdan, 2010) at 11.

represents the beginning of a journey on the constitutional-making process of globally sustainable community.[1262] Throughout the previous procedure, the Charter has been reasonably created on the basis of cross cultural, international environmental norms and general principles as well as endorsed by a large number of civil societies and non-state actors over the world community. These norms and principles have been codified in a form of covenant as a solemn commitment in relation to the common concerns of citizens around the world.[1263] Although the Earth Charter now is a soft-law, it is important to note that several hard-treaties relating to biodiversity and the environment such as the Climate Change, Biodiversity, or Whaling Conventions have been driven by the power of non-state actors.[1264] These treaties have employed covenantal norms as the "hard and soft law" strategies in the negotiation process to build international acceptance. Unfortunately, due to a certain lack of understanding regarding eco-covenantal agreement, they ended up in a form of contract agreement. Lack of understanding is an obstacle, so more than soft and hard law argument, the traditional covenant principles that authenticate, certify, establish and serve as the foundation for and underpin the Charter need to be re-interpreted.

6.7 Interpretive Principles

This is because the Earth Charter has been set forth beyond the hard-treaty agreement; this living eco-covenant document is in the process of building a better interpretive understanding, rather than in the form of a final consensus text. Before all participants agree to make their own solemn commitment to the Charter's principles, the challenge of this section is to interpret them in a practical context related to the eco-covenant approach for all societies to embrace and implement. As such, there are eight basic principles.

6.7.1 Sacred Trust: Without sacred value as a starting point, eco-covenants cannot be developed and The Earth Charter goes on to say "protecting Earth's diversity, vitality, and beauty is a sacred trust".[1265] What is the source of this sacred trust? In fact, this sacred trust has still been kept and practiced as *a common ground* throughout various traditional belief systems. Acknowledging the sacred reality of life and Earth provides voluntary respect and responsibility.[1266] It is a fundamental source of ecological sustainability. Nevertheless, the theme of sacredness has wide variations depending on cultures and religions. Although various concepts are expressed in a unique language, they share the faith of "spirituality," "holiness," or "sanctity."[1267]Basically, a merit point of sacred doctrine has the

[1262] Sigrid B. Schwalbe "the Importance of Soft Law in Global Environmental Governance" in Bosselman Klaus and Ronald J. Engel *The Earth Charter: Framework for global governance* (KIT press, Amsterdam, 2010) at [95-116].
[1263] Gismondi, above n 61, at [189-200].
[1264] Schwalbe, above n 1178, at 100.
[1265] The Earth Charter, at Preamble; See also, Nicolas Kosoy, Peter G. Brown, Bosselmann Klaus and others "Pillars for a flourishing Earth: planetary boundaries, economic, growth delusion and green economy" (2012) 4 *Current Opinion in Environmental Sustainability* 1, at [74-79].
[1266] Martine Hawes *Twelve Principles: Living with Integrity in the Twenty-First Century* (Finch Publishing, Sydney, 2003) at 88.
[1267] Jane Hubert "Sacred beliefs and beliefs of sacredness" in David L. Carmichael, Jane Hubert, Brian Reeves and Audhild Schancle (eds) *Sacred Sites, Sacred Place* (Routledge, London, 1994) at [9-18].

capability to gather individuals, groups who care and respect for their strongly held beliefs. The sacred belief systems ensure and hold them sacred. Rules are created to protect the 'deep symbols' and their sacredness. It is important to note that ecological spirituality according to David Kinsley, does not necessarily belong to a formal type of religious institution or groups of /indigenous local communities, it can occur to all secular people who experience spiritual emotions on nature surroundings.[1268] For example, Steven C. Rockefeller as cited in Leslie E. Sponsel views "trees as an especially appropriate symbol of the interdependence of spirit and nature."[1269] It does not differ whether they are secular or religious beliefs, so ecological consciousness may occur as self-realization. Everybody would express their ecological awareness based on their own secular or religious visions as a common concern.

For ecological holistic view, the principle of sacredness helps regulating rules to preserve biotic common goods in several communities over the world.[1270] Besides modern legal institutions, sacred nature is a traditional wisdom to hold a balance of the human-natural relation. In the past, the notion of ecological sustainability and living harmoniously with nature has co-existed smoothly in a framework of sacred doctrine or cultural rules. Before structural anthropocentricism has replaced them, 'systems of sacred beliefs' are critical parts with respect to the natural and cultural diversity of human societies.[1271] Reclaiming such doctrine significantly empowers and identifies with strength to the local community level versus commercial transformation. The doctrine of sacredness implies restrictions and limitation on human behavior in order to refrain from doing things contra to the sacredness. Its function of sacredness in protecting nature through the natural places has established an unconditional commitment to bind members of communities to one another and to the sacred site. Founded in local communities, sacred belief systems have been stable for long times in the past, so local community must have been able to enforce regulation controlling the power of individual humans to exploit nature or other common goods that serve as benefits to the community. Besides protected areas by laws, it is important to note that the system of sacred beliefs focus on moral responsibilities to nature, sites, and other life forms, rather than rights of individuals or groups to use or access to them.

In sum, the relationship between those supreme symbols and all living things on Earth whether or not it is described in the diversity of Holy languages it is generally kept in an eco-covenant of sacredness. In other words, they can be considered as the Conan Law of Earth's ecosystem that governs human's activities towards the natural environment. Hence, sacredness of biodiversity shares a context of common ground that has value in those societies.

[1268] Kinsley, above n 779, at xxi.
[1269] Leslie E. Sponsel *Spiritual Ecology: A Quiet Revolution* (eBook by ABC-CLIO, 2012).
[1270] Michel J. Sheridan "The Dynamics of African Sacred Groves" in Celia Nyamweru and Michel J. Sheridan (eds) *African Sacred Groves: Ecological Dynamics & Social Change* (Unisa Press, Ohio University Press, 2008) at [9-30].
[1271] Bosworth Andrew, Chaipradikul Napat, Cheng Ming Ming, Gupta Abhik, Junmookda Kimberly, Kadam Parag, Macer Darryl, Millet Charlotte, Sangaroonthon Jennifer, Waller Alexander *Ethics and Biodiversity* (Bangkok, UNESCO, 2011).

6.7.2 Ecological Sustainability: this ethical principle closely links to the sacred values of nature. Eco-sustainability is a way of living based on the bounds of continual ecological integrity, and taking care to be mindful of the impacts that could upset natural sacredness. Eco-sustainability depends on acknowledging a duty that is not to upset the harmony with the natural environmental surroundings. Although this art of living requires a lot of practice and is not easy, it is necessary. By sharing ecological consciousness with people including family members and others in society, this can enhance better understanding. With respect to resource exploitation and consumption with respect to caring for nature guides us to take no more from nature than eco-system carrying capacity to be resilient. Ecologically friendly technology working with respect to ecological limitation and rationality can provide a better pathway and a clearer picture to our better futures. Enhancement of the quality of human life by poverty reduction is a process of how to live sustainably with bio-diversity that we humans are part of. Sustainable use of biotic resources must and ought to go hand in hand with conservation, and conservation must be restricted to preservation and protection because biodiversity conservation alone cannot protect our natural life-support system.

Bio-diversity and eco-system sustain each other, creating a momentum of life. Living with this rhythm requires a practice of non-violence (*Ahimsa*) to Earth. The Earth Charter principle IV/15 and 16 state we should "treat all living beings with respect and consideration", and "a culture of tolerance, non-violence, and peace", respectively. Furthermore, it suggests that preventing animal cruelty; protecting wild animals from cruel methods of killing, and avoiding harm(s) to non-targeted species.[1272] Non-violence refers to a provisional process of peace.[1273] If society seeks peace, *ahimsa* has to be practiced. Pragmatically, non-violence to nature does not signify passive action rather it is pro-active. According to Sulak Sivaraksa, advancing a comprehensive process is important to acknowledge the culture of violence, constituted by the greed, hatred, and ignorance, underpinning beneath social structures.[1274] Un-equal access for basic needs in terms of natural resource law and policy promoted by greed, hatred, and ignorance could be and will be able to be eliminated by love and compassion.

To achieve this, commentators suggest "planetary justice" that grants privilege to Earth in terms of the utilization of diverse biotic-sources for maintaining and restoring ecological balance.[1275] In terms of some of the definitions, eco-sustainability includes ecological justice and ecological human rights[1276] and implies the protection of biodiversity, for the sake of the welfare of both, that includes, other life forms and humans. Therefore, human demands must be maintained within a framework of eco-carrying capacity based on eco-justice. The true meaning of human development must be in harmony with nature and its

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[1272] The Earth Charter, at Principle IV.
[1273] Robert L. Holmes and Barry L. Gan *Nonviolence in Theory and Practice* (2nd ed., Waveland Press,Long Grove, 2005).
[1274] Sivaraksa *the Wisdom of Sustainability,* above n 1239, at [19-20].
[1275] Andrew Light "Ecological Restoration and the Culture of Nature" in David Schmidtz and Elizabeth Willott (ed) *Environmental Ethics* (Oxford University Press, Oxford, 2002) at [178-187].
[1276] Bosselmann, above n 284 at [80-85], [127-131].

surroundings by nurturing eco-spirituality and culture in appropriate measurement with holistic knowledge. If Earth is plentiful with a variety of life, humans will have benefits as a part of the Earth's system.

6.7.3 Protection of Ecological Integrity: the Earth Charter principle II/5 stated that "protect and restore the integrity of Earth's ecological system, with special concern for biological diversity and the natural process that sustains life."[1277] At this point, it is necessary for biodiversity conservation to focus on the protection of the intrinsic value of biodiversity, which is ecological integrity. In other words, the integral functional diversity of natural transaction throughout the Earth's biosphere and physical environment consists of the specific exchanges and cycles of the natural food web.[1278] These cycles have a systematic integrity that includes the variety of all life forms that must not be violated unless by evolutionary process.

In practical terms, the ecological holistic approach can be seen in the principle of ecological integrity ("EI") and protection. By keeping the EI safe from harm or danger, particularly from human activities, this theme is not necessarily limited within individual species/habitat conservation or non-use preservation. Nevertheless, the EI focuses on the well-being of each element of diverse life forms towards our biotic community and role of functions. Insofar as EI recognizes that local ecological communities are comprised of the diversity of life interconnecting in relationship constructions by flows of energy and matter, at the same time the local diversity of ecosystems supports the healthy biosphere. Furthermore by protecting EI, human beings are able to enjoy natural fruitfulness without jeopardizing those primary sources of the entire community (enjoying the fruit without cutting the fruit tree.) Hence, the EI principle can be applied to the global level as well the local level.

With respect to global biodiversity protection, Laura Westra suggests that the integrity principle serves as the fundamental principle of a global ethic.[1279] As Holland explains "the principle of integrity is essentially the injunction to respect the integrity of ecological and biological processes (save for the purpose of self-defense.)"[1280] With regard to maximum capacity or 'climax system', in terms of ecological integrity and the particular stage it has reached, criticism has been made. Westra seems to rest her EI on the wilderness perspective, removed from human interference. Westra points out that "instead of focusing on the evolutionary processes' unconstrained, natural unfolding depends on the non-imposition of strong anthropocentric stresses, so that unstressed, un-manipulated natural systems would be closest to a state of true integrity...."[1281] Therefore, the lowest human intervention is the strongest ecological integrity, in other words, a stage of "optimum capacity." Having the greatest capacity for sustaining and continuing the

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[1277] The Earth Charter principle II/5.
[1278] Brendan C. Mackey "The Earth Charter and Ecological Integrity: Some Policy Implication" in Clare Palmer (ed) *Worldviews: Environment Culture Religion and Ecology* (Brill Academic Publishers, Leiden, 2004) at 79.
[1279] Laura Westra (ed) *Living in Integrity: A Global Ethic to Restore a Fragmented Earth* (Rowman and Littlefield, Maryland, 1998) at [3-17].
[1280] Alan Holland "Foreword" in Westra Laura (ed) *Living in Integrity: A Global Ethic to Restore a Fragmented Earth* (Rowman and Littlefield, Maryland, 1998) at [xi-xvi].
[1281] Westra *Living in Integrity: A Global Ethic to Restore a Fragmented Earth*, above 1258, at 43.

whole range of potential evolutionary processes for a particular system at a specific time and space could indicate the presence of ecosystem integrity, due to the fact that there is no wild-land on Earth today that can be said to be pristine or has escaped anthropocentric alteration.

Eco-centric scholars have considered safeguarding ecological integrity as a fundamental theme of biodiversity conservation. However, arguably, the term 'consideration' faces unrealistic arguments. Ecological integrity can be clarified in two ways. First of all, the terms 'integrity' and 'health' can be interchangeably used. Secondly, protecting ecological integrity and biodiversity is associated with a strong concept of sustainability or "ecological sustainability." Thus far, the valued-goods perspective of individual species conservation has been challenged by the model of the concept of holism, which integrates both living diversity and non-living diversity into the concept of "integrity." At this point, biodiversity conservation requires protect ecological integrity. For Westra, the principle of integrity can range from the quality and the health of an ecosystem to happiness and justice. Because ecological integrity refers to human well-being, it actualizes happiness and justice within its fundamental meaning. Furthermore Westra explained "one must be alive in order to be happy or to be treated justly."[1282]

In terms of ecological perspectives, Brendan Mackey describes ecological integrity as the continued health or suitable functioning of ecosystems on local and global scales, and the ongoing condition of renewable resources and eco-services (welfares).[1283] Due to the fact that the definition of "integrity and health" has multiple meanings, depending on the terms of use, and often creates confusion whilst applied to the concept of Earth's ecosystem, ecologists try to apply a medical model of health to explain ecosystem integrity in parallel with a human perspective of healthy systems. In so far as from a healthy perspective as a contrasting model can create a picture reflecting common sense, health can be understood as the absence of illness or disease, or the state of being well. Therefore, we can imagine that an ecosystem is similar to our own body's system, in which it is necessary to treat it well and provide it good food, clean air and water to maintain a state of health and wellness. Ecologists highlight the dynamic processes of an ecosystem, which is to protect ecological sovereignty, or the self-integrative processes of nature as an essential element in ecological sustainability. As Mackey states, the Earth's sovereignty consists of two main parts: the global scale (sky) and the local scale (land). Both scales interact with each other, generating the proper conditions for life to live in. However, while elements of both scales have continually been eliminated bit by bit, both functions become ineffective.[1284] This could refer to lacking wellness or poor health.

[1282] At 9.

[1283] Mackey C. Brendan "Ecological integrity: A Commitment to life on Earth" in Peter Blaze Corcoran, Mirian Vilela and Alide Roerink (eds) *The Earth Charter in Action: Toward a Sustainable World* (KIT, Amsterdam, 2005) at 66.

[1284] At 66.

It is clear that the unsustainable activities of humans have made the living planet unhealthy and sick. This is because *the world* that we have created and the Earth, which we inhabit, both exist in overlap.[1285] The smaller human world exists within a bigger world. In this way, Earth has its own law, which humans need to learn and follow. Although we may have the ability to adapt to the laws of Earth, we cannot completely change such laws. Regarding the concepts of ecological integrity and ecological sustainability, living nature could heal and restore. The unifying idea of biodiversity management becomes the governance of protecting and restoring health to ecological processes at all levels. Additionally, in an ethical sense, its aim attempts to reconnect our relationship with nature again.[1286]

In eco-spiritual practice, the ecological integrity must be secured as a sacred trust to ensure human-nature relationship. In order to achieve, biodiversity governance at global/local levels is workable in the best way whilst humanity (local, region, or global) gains participation in respect of protecting Earth as our home as well as respecting its dignity. Satish Kumar's argument[1287] proposes 'reverential ecology.'[1288] Reverential ecologists take nature into account in terms of its sacredness. Nature has sacred values and while humans can benefit from nature for our survival because we are part of nature, we should nonetheless accept these benefits with gratitude and not take them for granted as a right. Satish suggests the give and take principle that we should recognize that whatever we take is a gift of nature and receive it with gratitude. After taking, we must care for nature by not polluting or contaminating it and by being respectful of nature.[1289] Illustrating from Jainism, Satish portrayed what he views as the sacredness of nature. His suggestion mirrors Deep Ecology, which should be developed further to form a 'reverential ecology' that challenges the Darwinian notion of survival of the fittest.[1290] The Darwinian paradigm states that in nature, all species compete with one another for survival. Yet, the concept of sacredness claims that species are not in competition with one another; rather, they sacrifice themselves and are thus sacred themselves for giving their lives in order to continue life. Satish correlates this rhythm of nature with the Hindu wisdom of the "Dancing of Shiva".[1291]

Ecological integrity implies notions of care and precaution for sacred values in terms of issues relating to exploiting biotic resources. Although humans benefit from biotic resources, it is necessary to share biodiversity with the Earth and other life forms to enjoy it. Sufficient use and effective management in renewable energy such as water, soil, forest and marine products must be managed at the lowest impact

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[1285] Edith Brown Weiss "The Planetary Trust: Conservation and Intergenerational Equity" (1984) 11 *Ecology L.Q.* 495, at [495-582].
[1286] Gretel Van Wieren *Restoring Earth, Restored to Earth: Christianity, Environmental Ethics, and Ecological Restoration* (Yale University, PhD dissertation, 2011).
[1287] See, the Institute of Reverential Ecology (12 July 2012) at <www.reverentialecology.org/>
[1288] Pr. Kumar Satish "Beyond Deep Ecology" (uploaded at Youtube on 14 February 2010) available at <www.youtube.com/watch?v=MlmTLvHMg-g> (last visited on 2 Oct 2014).
[1289] Ibid.
[1290] Pr. Kumar Satish "A Day with Satish Kumar {morning} (1/2)" (uploaded at Youtube on 6 July 2010 available at <www.youtube.com/watch?v=MCW-qkbyezs> (last visited on 2 Oct 2014).
[1291] Pr. Kumar Satish "A day with Satish Kumar {evening} (2/2) (uploaded at Youtube on 6 July 2010 available at <www.youtube.com/watch?v=qzGyidN1nqE> (last visited on 2 Oct 2014).

to ensure healthy ecosystems. Therefore, with due care and while respecting biodiversity it is not free to be abused or exploited to serve human interests only. For example, Sustainable-use must be implemented subject to the guidance of the fruitfulness principle.[1292] Due to the sacred value that has been protected, humans enjoy such fruitfulness of natural fertility. Hence, care and precaution and concern must prevail. So, with regard to the term of exploitation, it is necessary for us to realize that we have a right to enjoy the fruit (usufruct right or the right of use) yet cannot clear-cut the forest or pollute the river. The reason is because we are an integral part of ecosystems that have ecological integrity.

6.7.4 Interdependence of Biotic Communities: Earth consists of the variety of community, structure, and the function of biodiversity. The Earth Charter has recognized that "all beings are interdependent and every form of life has value regardless of its worth to human beings."[1293] All life forms rely on each other for survival and prosperity in association with mutual interdependence. Some are related as beneficial reciprocity, whilst others are coercible. This integrated functioning of ecosystems establishes cooperative relationships in the biotic community. That relationship promotes harmony with the law of naturalness. Leonardo Boff points out that the Earth Charter is a new paradigm that guides humanity in relating to nature.[1294] The Charter is currently only a synthesis document, recognizing Earth is as a living organism with its own dignity, so our human community is a part of the Earth's community. The Earth Charter stands for holistic and integrated governance for humanity and sacred values of Earth. This is since all living things are connected including the sacred biosphere, ecological integrity, and sustainability. In this interdependent affiliation, there are no absolute freedoms in terms of liberty and human rights to alter biotic community freely. Therefore, humanity is obligated in some ways to cooperate with the law of naturalness as long as we live on this planet hence a change in our paradigm is necessary.

6.7.5 The Middle-Way Doctrine (Philosophy of Being in Balance): The Earth Charter points to social and economic justice. The principle III regards poverty reduction in terms of an ethical, social, and environmental imperative for achieving the concept of sustainable livelihood. The practicing of Being in Balance could offer policymakers/stakeholders to avoid the mistakes that lead to the conflict in biodiversity protection. For instance, it can be found in a case of enforcing conservation, regulations and traditional hunting practices in a surrounding land of conserved areas. While the forest authorities may take an extreme measure to achieve their own ends, traditional local collectors may choose another extreme way to do it otherwise. Hence, in order to balance eliminating poverty and maintaining biodiversity protection, adopting and engaging the Middle Way may be a proper choice.

[1292] *The Green Bible: New Revised Standard Version* (San Francisco, HarperOne, 2008) at I-29-30.
[1293] The Earth Charter Principle I/1/a.
[1294] Leonardo Boff "Respect and Care for the Community of Life with Understanding, Compassion, and Love" in Peter Blaze Corcoran, Vilela M., and Roerink A.*The Earth Charter in Action* (KIT,Amsterdam, 2005) at 43.

The Middle-Way is the means to conduct our way of living that fits arriving to the destination to reach the goal of what we are trying to achieve. Here in this case is the goal of ecological sustainability. For example, we cannot let people suffer death because of poverty, and at the same time we cannot let hungry people destroy the integrity of biodiversity. The Doctrine does not take a win-win solution among hungry people, nor compromise between good and bad for those, nor does it signify to go in the direction of the middle or common ground between poverty and protection. However, such common ground or agreed goal must carefully undertake 'the most necessary compromises.' The Middle Way solution signifies attaining the goal, like an arrow that is shot to the inner spot of the target. It does not go to the left or right. If the agreed upon goal of biodiversity conservation and sustainable use is to protect ecological integrity, the Middle-Way can guide those stakeholders to the balance of living or the harmony of living with Dhamma. It is important to note that this art of being in balance is a sub-set of Dhamma. As mentioned, Dhamma holds the sacred reality of life, ruling human society. It is the fundamental basis of Buddha's doctrines. In Buddhism, it is necessary for the law of humans to be harmoniously adapted to the law of Dhamma. In Dhamma's wheel of life, all things can persist and sustain themselves while continuing into the future. This wheel of life will be stopped if the measure takes a single value over others, and for Buddhists this will be considered as a moral wrong.

Speaking in terms of anthropocentric versus eco-centric values, the core of this doctrine is a neutral practice. It is freely applicable whether one is an anthropocentric or an eco-centric believer. Whilst it may not be entirely eco-centric, it is certainly not anthropocentric. Because those biodiversity values involve hierarchical connectedness, biodiversity governance depends on the relationship of a variety of values, which are also recognized in the CBD.[1295] As discussed with respect to sustainability, ecological value must be considered as the fundamental values that sustain other values. It must take a first priority to be protected.

If the CBD focuses on serving nation states' free will to harvest biological resources in an overloading biological capacity in a bid to heal poverty, it becomes particularly necessary to look after the welfare of other creatures on Earth. The Middle-Way is dependent on a compassionate giving, which signifies giving up the dominance, the greed and discarding the measures that jeopardize biodiversity and environment. In this situation, as humanity becomes more aware and recognizes our ecological interdependence, we may proceed with the pathway of giving at first and taking when it is available and give up moral wrongdoings. Biodiversity governance will not be able to be achieved without giving up anthropocentric greed. So, how to overcome greed this practice requires Sufficiency.

[1295] CBD, at Preamble.

6.7.6 Sufficiency (Philosophy of Enough)[1296]: It is too simple to say that we think we are lacking something, or we would not feel enough, so we need more. In contrast, if we think we have enough, or we would not feel lack, we would not need more. Sufficiency represents the overlapping moral control between the weak sustainable development and ecological renewable capacity. The fundamental problems of economic growth derive from the fact that economy is a part of a larger renewable system of the biosphere. As many of the raw materials of economic production come from nature, all of consumptive waste generated by the growth returns to Earth.[1297] In terms of ecological capacity, there is no organic waste in the ecosystem. Arguably, all organisms produce waste nevertheless waste for one species is food for another. This means nothing is wasted. In the ecological process of decomposition, waste is continually recycled and the ecosystem as a whole generally remains without waste.[1298] At this point, if everything is a necessary thing, there might not be any waste. As the economic growth increases in the larger size and scale and people stock more unnecessary products, it takes more from the Earth and pollutes more waste. However, because the growth relies on ecological resilience to renew its raw materials, it is necessary to re-consider protecting the ecological integrity of the biosphere.

Sustainable development refers to “meet the needs of the present without compromising the ability of future generations to meet their own needs”.[1299] Therefore, for those who believe biodiversity is regarded as commodity for sustainable development, it is significant to be aware of human greed. The main problem is unlimited human needs linking to design and greed that point to capitalism-based happiness, so it points to an unlimited stage within limited biodiversity. When a small group stocks all of those basic needs of all people in the community, monopoly and inequity occurs. This negative effect could lead to a scarcity of the basic needs. Clearly at the center point of today's ecological crisis is the imbalance between today’s world population and human demands toward biotic resources.

In regard to the pursuit of human happiness by acquisition and consumption the Earth Charter recognizes the notion of enough or sufficiency. The Charter Preamble at paragraph 4 "the Challenge Ahead" states that "we must realize that when basic needs have been met, human development is primarily about being more, not having more".[1300] By considering the sufficiency principle, 'the weak sustainable development' should be understood as the development that is sufficient in its needs without jeopardizing the prospects of future generations and other life forms. The Earth Charter principle II/7 stated the importance and necessity to "adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being".[1301] Thus, the Charter suggests the idea to "promote the development, adoption, and equitable transfer of environmentally sound

[1296] Liam Shields "The Prospects for Sufficientarianism" (2012) *24 Utilitas* 01, 101 at [101-117].
[1297] David T. Suzuki "Barriers to Perception: From a World of Interconnection to fragmentation" in Peter H. Raven (ed) *Natural and Human Society: The Quest for a sustainable World* (National Academy Press, Washington, 2000) at [11-21].
[1298] Capra, above n 84 at [82-86].
[1299] *Report of the World Commission on Environment and Development* UNGA A/RES/42/187(1987).
[1300] The Earth Charter, at Preamble.
[1301] At Principle II/7.

technologies."[1302] Firmly, the Earth Charter principle II/8/b points to traditional knowledge and spiritual wisdom in all cultures that support environmental protection and human wellbeing.[1303]

Therefore, practicing the doctrine of the Middle-Way and the moral consideration of Gandhi's Economy with Sufficiency Economy could be useful. Gandhi's ethical code of voluntary simplicity stated "the world has enough for everybody's need, but not enough for everybody's greed."[1304] Gandhi's virtue suggests we use restraint in terms of the greed of needs in a bid to save value Earth's biodiversity for future generations, as well as for the Earth itself. This practice is perfect in religious societies, and family-level, village-level, small-scale communities with their own cultures and traditional methods. It is a basic step to practice. However, for modern societies, it may be too restrictive to expect societies to do everything by themselves using simple tools and machinery. In the very open world of today, the basic idea of Gandhi's economy is so extreme it may not fit modern needs and modern technology. Once people are educated and understand the sustainable way to live, without jeopardizing the Earth, they will feel happy to commit to do such these things whereas legally forcing people to comply to do things that they do not want to do, is not sustainable. Likewise enforcing them to give up the consumptive way is immoral as well.

"Sufficiency Economy"[1305] represents localism in terms of Thailand's traditional economy approach in association with an ethical philosophy that guides the livelihood and behavior of people at all levels of the community relative to the wisdom and applicability of the ethics of Buddhism. Representing the antithesis of capitalist consumerism, a sufficiency economy focuses on the doctrines of moderation, efficiency, simplicity of life-style, and sustainable use based on local resource availability. It is a possible measure, implemented by living in a more low impact style or manner with the natural carrying capacity with all due respect to the Dhamma's wheel of life.

In Thailand at a strong Buddhist community, life is enhanced via avoiding exercising one's wants and greed. According to such belief, ultimate happiness will be accomplished while a person is fully justified and lives in a manner of security and sufficiency. Working harder, earning more money, buying more things, on an ongoing routine may very well be one of the economic strategies that drives and motivates people to seek future happiness that they may not truly reach. Gluttony will not be filled up by eating more instead one will be satisfied with enough. The sufficiency economy requires that enough people (sustainable people) who are resident within the covenantal community. In this context, the concept would be an economically fundamentally conditioned by today's basic needs, and ecological mindfulness. However, the weakness of this approach clearly occurs because the core enforcement depends only

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[1302] At II/7/c.
[1303] At II/8/b.
[1304] Ramachandra Guha and Alier Juan Martínez "Mahatma Gandhi and the Environmental Movement" in Ramachandra Guha and Alier Juan Martínez (eds) *Varieties of Environmentalism: Essays North and South* (Earthscan, London, 1997, 2000, 2006) at 153.
[1305] UN Sustainable Development Knowledge Platform "Green economy in the context of sustainable development and poverty eradication" (2 May 2012) <http://sustainabledevelopment.un.org/index.php?page=view&type=1006&menu=1348&nr=2126>.

upon moral force. Whilst the sufficiency economy is mainly a governmental policy, it lacks the legal identity to support and back it up. Moreover as the political-economic monopoly with high-corruption has subsumed society, the Buddhist moral force underpinning today's Thai society has continually declined. The value of the Buddhist community had been replaced by an individual-consumerist society.

6.7.7 Planetary Altruism: This ethical principle refers to the Buddhist scripture known as "the Brahma-vihāra" which is called by Nyanaponika Thera (a German Jew monk) under the name of "Four Sublime States"; that are Loving-kindness (*metta*), Compassionate giving (*karuna*), Sympathetic/altruistic joy (*mudita*), and Equanimity (*upackha*).[1306] This doctrine shares a common sense with other beliefs. In Christianity, it is similar to the doctrine of Christian love or compassion[1307] expressing in terms of stewardship or guardianship.[1308] Nevertheless, the attitudes are the way of living peacefully with other creatures. This approach highlights a concern for the planetary welfare of all life forms, achieved by giving up and letting go of some of the unnecessary desires of human interests. These ecological attitudes are important to the eco-centric legal paradigm.

Planetary altruism or loving nature's argument for protecting intrinsically valuable biodiversity is one of the strong approaches adopted by the World Charter for Nature and the Caring for the Earth.[1309] On the other hand, the homocentric or man centered argument usually relates to human egoism and Social Darwinism, which places humans at the apex of natural evolution. Those who argue on these grounds hold the view that "the fittest ought to survive" or "the fittest will survive."[1310] Similar to the theory of Richard Dawkins's Selfish Gene, what humans consider most often fits our own interests, because our genes are naturally selfish.[1311] For Darwinism, organisms by nature are self-interested, wishing to continue living and breeding because continued existence expresses an evolutionary advantage related to the ability to pass on genetic material to the next generation. In contrast, it is also argued that humans exist with selfish genes, and also altruistic ones.[1312] Organisms are predisposed to assist others of their species, particularly if providing help does not significantly hinder one’s own survival.[1313] As a result of natural evolution, Wright's hypothesis is that organisms are born with the two different tendencies, that of altruism and self-interest.

[1306] Nyanaponika Thera *the Four Sublime States: Contemplations on Love, Compassion, Sympathetic Joy, and Equanimity* (Buddhist Publication Society, Inward Path, Sri Lanka 1999) at [14-20].
[1307] Nyanaponika Thera *Buddhism and the God-Idea* (Buddhist Publication Society, Sri Lanka, 1962, 1970, 1981, 2008) at [2-4].
[1308] Peter G. Brown *the Commonwealth of Life: a Treatise on Stewardship Economic* (Black Rose Books, Montreal, NewYork, 2001) at 15.
[1309] IUCN, UNEP, and WWF *Caring for the Earth: a Strategy for Sustaining Living* (Gland, Switzerland, 1991) at [13-17].
[1310] Donald Van De Veer and Christine Pierce *The Environmental Ethics and Policy Book* (2nd ed, Wadsworth Pub, Belmont, 1998) at 17.
[1311] Richard Dawkins *The Selfish Gene* (Oxford University Press, Oxford, 2006).
[1312] Robert Wright *The Moral Animal: the New Science of Evolutionary Psychology* (Pantheon Books, NewYork, 1994).
[1313] At [116-117].

According to evolutionary psychology, *Homo sapiens* have been shaped by evolutionary forces and presented behaviors evident in our species that reflect the consequences of these forces or experiences, which form our species' moral beliefs, judgments, emotions and behaviors.[1314] Wright suggests that human genetics have "reciprocal altruism" regarding degree of relatedness. Wright's theory of reciprocal altruism in humans points to relationships among humans. For example, friendship, affection and trust were created to hold people together before the signed contract.[1315]

Lack of ethical practices allows the selfish gene to dominate the moral gene. And even though the human's moral gene is seduced by several anthropocentric theories such as the game theory, it does not disappear. From the Buddhist perspective, a human is a trained animal who can cultivate good conduct by training and practicing the basic rules of the Five Precepts as mentioned. So, it can be said that a result of reciprocal altruism relies on nurture and practice. Whilst it can therefore be concluded that humans cannot be entirely motivated or governed by either self-interest or altruism, as both can be treated as equally important (Ying and Yang in Chinese philosophy) it is unfair to abandon the reciprocal altruism of humanity by promoting only human self-interests as common sense of all.

Additionally, an approach toward living sustainably with nature offers a path to avoid the circle of selfishness. The wisdom of religious and local traditional cultures teaches the way of Earth altruism.[1316] The planetary altruistic paradigm can be found in Eastern traditions in concepts such as non-violence. Humans can practice and cultivate our own ecological altruism and we do not need to blame our selfish genes for letting us exploit biotic resources for our own interests. For those cultures that view humankind as a part of nature, loving nature can be viewed as non-violence that limits humans in conducting our actions or creating technology against nature. Whilst this approach is applied to traditional technology, it helps to create environmentally friendly activities that we can adopt to live harmoniously with nature. Traditional technology based on non-violence reflects simplicity and sufficiency that causes less harm to our natural surroundings. In contrast, if we apply the notion of violence to our technology or machines, the results might increase our productivity rates. If our weapons are created out of abhorrence and anger, they will cause vast damage, too.

Regarding biodiversity, it is very wrong to conclude that selfish humans are master of all species because they are capable to use violent technology, so they are the strongest species. There is nothing wrong with controlling nature and other resources for human welfare and wellbeing. As such, it is legitimate for human beings to exploit biodiversity for their interests. Indeed, humans cannot be completely self-interested, just as they cannot be entirely altruistic. What is important to consider is that it is the negative

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[1314] At 117.
[1315] At 198.
[1316] Goodenough Ursula "Naturalizing Morality" in Charles R. McManis *Biodiversity and the Law: Intellectual Property, Biotechnology and Traditional Knowledge* (Earthscan, London, 2007) at [36-37].

consequences of selfish actions or the rewards of altruism that allow humans to deplete resources and threaten their own survival.

The Earth Charter states that "treat all living beings with respect and consideration."[1317] It means relinquishing the harmful actions that potentially cause an assault on or killing of innocent life forms for human pleasure. According to Johan Galtung, "violence breeds violence, so there is no mercy or creation in killing."[1318] Being humble in regard to nature is an extension of ecological interdependence to the whole biosphere, and a link to sufficiency and sustainability. Wildlife, endangered species, or valuable species are a part of the ecosystem, so both bio-centric and eco-centric views on saving species are linked to the Earth's system. Both schools can be reconciled within the context of Planetary Altruism.

6.7.8 Ecological Responsibility: This principle is a core component of the well-known 'common but differentiated responsibility' and is precautionary. The effectiveness of these principles is reliant upon a better understanding of the ecological covenant in that humanity as a whole realizes its own role as a part of the biotic community. Unfortunately, responsibility and obligation for the commons are less concerned than freedom and rights of use in all traditional ethics-based anthropocentrism. This is because ecological responsibility requires practice. In terms of international law, these are lacking. In Western philosophy, ecological responsibility can be found in the work of Hans Jonas' Ethics of Responsibility.[1319] According to Jonas's view,[1320] human responsibility for future generations, nature, and non-human species came from the violence technology that we create and use without caution. The core theme is a "non-reciprocal responsibility", described as "a *responsibility-for"* (Earth) rather than the mere theme as "*responsibility-to"* (humanity).[1321] The reciprocal obligation seems to limit to the anthropocentric sphere that is an alternative or a choice to make a commitment. However, the non-reciprocal obligation is not a choice. It speaks of the solemn commitment that we must undertake.

In terms of biotechnology, the commentators point out that Jones disagreed with the genetic enhancement because the negative impacts were impossible to predict.[1322] These consequences of ecological decline, climate change, and GMOs releasing to nature are undeniable refusing legal accountability. Jonas suggested responsibility for nature equates to moral or legal accountability, which is related to freedom of choice.[1323] In general, people often claim their freedom of choice is important, so they are free to choose their own action without being forced. On the other hand, such action includes

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[1317] The Earth Charter, at Principle IV/15.
[1318] Galtung, above n 1165, at 39.
[1319] John-Stewart Gordon, Holger Burckhart and Paula Segler "Introduction" in Gordon John-Stewart, Burckhart Holger and Segler Paula (eds) *Global Ethics and Moral Responsibility: Hans Jonas and His Critics* (Ashagte, Burlington, 2014) at [1-5].
[1320] Jonas *the Imperative of Responsibility* above 1060, at [6-8], 90.
[1321] Jan C. Schmidt "Ethics for the Technoscientific Age: On Hans Jonas' Argumentation and His Public Philosophy Beyond Disciplinary Boundaries" in Gordon John-Stewart, Burckhart Holger and Segler Paula (eds) *Global Ethics and Moral Responsibility: Hans Jonas and His Critics* (Ashagte, Burlington, 2014) at [161-162].
[1322] Gordon John-Stewart and Burckhart Holger (eds) *Global Ethics and Moral Responsibility: Hans Jonas and His Critics* (Ashagte, Burlington, 2014), at 2.
[1323] Rockefeller "Ecological and Social Responsibility", above n 1144, at 182.

insight, circumspection, precaution, avoiding harm and so forth. The rational predictability in terms of the potential cause of the harm brings responsibility and legal obligation. In terms of humankind's moral/legal obligations in regard to the cause of GMOs, it can be viewed as culpable ignorance. Still and all, in terms of GM, ignorance does not make the ecological responsibility disappear.

It is not astonishing that both biotechnology and 'bio-engineering' are said to increase higher economic values, or produce more yields in relation to modern agricultural and pharmaceutical industries. Under the traditional Western paradigm, art and craft allow *techne*, so technology with technique is an ordinary human activity.[1324] It has been said that the intelligence or knowledge can make modern human life more comfortable than in the past however a potential misuse of unleashed capacity of technology has impacted the natural capacity of our planet altering earth's ecosystems. Furthermore, biotechnology/engineering has created an attitude of fear and a certain danger in human communities. Knowledge of GMOs is an outcome of personal designs from individual interests, so that it is recognized as individual rights (property rights) yet if its consequences result in damage to the human community as a whole, this technology cannot be counted as ordinary activities. If technology provides us with a great power to master nature, it will come hand in hand with our great responsibility as well.[1325] Jonas describes the relationship between technology and responsibility as one in which humans have a causal power (technology), and this power of action produces an effect on the natural world.[1326] This power of action is under human control (the agent's control), and humans can foresee its native consequences to some extent. As a result, humankind should have a responsibility to our natural environment because we are a part of it, and are responsible for the technology we invent.[1327]

Biodiversity is sensitively affected by human activities that disturb environments. Since biodiversity and the biosphere are held in a trust for humans and all life forms, biotechnological activities have potentially produced irreparable consequences to earth's ecosystem and as such these require us to take a precautionary responsibility.[1328] The precautionary principle is a rule about the management of uncertainty in the assessment and governance of risks. This rule is recommended in regard to deciding about activities, a cautious (careful) approach should be undertaken in the face of irreversible results, in particular, if such results could cause harm to the environment and human health. Therefore ecologically sound activities as mentioned in the Earth Charter should be applied to avoid the risk of serious damage to ecological integrity. It is important to realize that "safe better than sad" does not signify taking no action if there is identifiable risk. As can be seen in the Earth Charter II/6/a suggests that "take action to avoid the possibility of serious environmental harm even when scientific knowledge is incomplete or

[1324] Martin Heidegger "The Question Concerning Technology" in David M. Kaplan (ed) *Readings in the Philosophy of Technology* (2nd ed, Rowman & Littlefield Publishers, Lanham, 2004) at [9-10].
[1325] Hans, above n 1143, at [6-8].
[1326] At [6-7].
[1327] At 8.
[1328] The Earth Charter, at Principle II/6.

inconclusive." [1329] This rule attempts to ensure that in situations where scientific theories or predictions can go wrong, it is better to err on the side of safety.

Additionally, principle II/6/b of the Charter stated that "place the burden of proof on those who agree that a proposed activity will not cause significant harm, and make the responsible parties liable for environmental harm."[1330] Overall, the precautionary principle/approach has been invoked in a wide range of international environmental law, treaties and policies. It aims to support ecologically sound activities in bio-environmental protection at global and domestic levels. The principle is useful to eliminate ignorance, denial, negligence and uncertainty about the certain eventuality of ecological reality. In terms of applying the precautionary obligations to biotechnology and bio-engineering, it would prevent the unintended mistakes of GMOs released into the natural environment, in particular, to those who insist the build up of species, and genes which could be passed onto the next generation.

6.8 The Eco-Covenant Governance

The ecological covenant governance (ECG) refers to a network system[1331] which expands the range of multi-participants involved in the protection of biodiversity commons into the process of the transformative aspects of global governance for sustainability regardless of an over hierarchy. Those multi-participants shall be covenantal together by the Earth Charter as an eco-covenant agreement. Similar to the notion of constitutionalism,[1332] the Earth Charter has a harmonizing strength and trust because of its democratically drafting process including multi grass-rooted sectors in supporting a global moral community.[1333] Such reason points to the basic relationship between members. Bosselmann suggests that the ultimate goal of trusteeship is to preserve the integrity of the earth's ecological systems.[1334] So, the covenant of trust allows all members to achieve agreed upon goals effectively because of their connection and collaboration. Reciprocal beneficiaries occur among members because they agree to sharing information, pooling resources, and knowledge throughout the process of joining together. Because it is the covenant agreement, the ECG requires productive performances based on its democratic shared agendas for action. The advantage of this network is more flexible as well as durable, and suitable to serve the long-term environmental solutions.

As discussed in regard to Ostrom's model of common-pool governance, an achievement of the ECG requires global environmental institution. Bosselmann outlines a model of World Environmental

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[1329] At Principle II/6/a.
[1330] At Principle II/6/b.
[1331] Candace Jones, William S. Hesterly and Stephen P. Borgatti *A General Theory of Network Governance: Exchange Conditions and Social Mechanisms* (1997) 22 *Academy of Management Review* 4, at 911-945.
[1332] Bosselmann, above 294, at 545.
[1333] Brendan Mackey "the Earth Charter, Ethics, and Global Governance" in Colin L. Soskolne and Laura Westra *Sustaining Life on Earth* (Lexington Books, Lanham, 2008) at 197.
[1334] Bosselmann, above 294, at [257-258].

Organization (WEO) as an example.[1335] However, the structure and rules must be different from the statehood and private property system. To secure those members' commitments in trust for protecting ecological integrity the said institution should be grounded on the constitutional mode that seek the collective norms related to the principles of the Earth Charter. Grounding on the principle of common heritage of humankind, the earth commons belongs to all life forms and future generations who cannot present themselves, so the nation-states may act as their trustee to conserve and maintain the integrity of territorial biodiversity. At this point, the nation-states will become as a member of the ECG rather than the dominating actor.[1336] Even so, in regard to avoiding the government's monopoly over other members those state, trustees hold fiduciary obligations to perform their duty for the earth commons.

6.9 Conclusion

Eco-covenant principles and governance ensure covenantal commitments of those members. Its model suggests the constitutional institution based on the Earth Charter framework. The ECG considers all multi-participants including the nation state, civil society, NGO, and business to work together towards the transformative aspects of global governance for sustainability.

[1335] At 257.
[1336] Klaus Bosselmann "Institution for Global Governance" in Colin L. Soskolne and Laura Westra *Sustaining Life on Earth* (Lexington Books, Lanham, 2008) at 17.

THESIS's CONCLUSION

1. Key Findings

In terms of the transformation approach it is a shifting process of the anthropocentric statehood paradigm, and international biodiversity governance to the ecocentric state-trusteeship. The thesis found that it seems that state sovereignty has been treating its own territorial sovereignty in the same way as private property, so State cannot deny global responsibility. In private property jurisprudence, the private property doctrine consists of negative and positive rights over things. According to Locke, the landowner cannot use its own property to cause harm/damage others. In addition it is necessary to take good care of his/her property as husbandry ethic. Because biodiversity is viewed as the global commons, its intrinsic values support all life forms with respect to earth's biosphere. Genes, species, and ecosystems are a part of the entire earth community that functions the biosphere. The outcome of the ecological functions such as biogeochemical cycles and ecosystem services are moveable beyond the geopolitical lines. This natural environment cannot be captured under the rule of capture or state sovereignty. Thus, State does not have an exclusive right over biodiversity, it has only a right to use and a duty to use in a sustainable practice. State trusteeship approach is suitable for this sovereign transformation because it responds to legal and ethical matters. Trust reflects good neighbourliness. In the arena of governing the earth's biodiversity, mutual restraint to safeguard the rest of biodiversity for our future generations and for earthly ecological resilience requires trustfulness among good friends. Rather than mutual benefit based contract agreement, mutual restraint requires a stronger commitment to hold trust. So, this is the ecological covenant approach.

International biodiversity agreement relies on culture of contract doctrine which minimises common responsibility, but maximise rights and benefits of parties to gain an agreement. So, this system does not fit with the new era of global environmental problems. Territorial sovereignty cannot prevent global environmental harms. State parties of the Biodiversity Convention mainly join the treaty in order to protect their sovereign rights over the earth biodiversity commons. Mere responsibility based on traditionally international tort law cannot prevent states overexploiting their territorial biodiversity. And due to their concern related to biological resource shortage, states and biotechnologically multinational businesses have formed a new relationship referred to as private-public partnerships. With the absolute power of states, particularly in a developing country, the State/Market partnership has an influence over food and biological resources.

Market based biodiversity neoliberalism may increase the instrumental values in terms of economic assets in short-term gains that can serve to encourage the businesses and the local community to participate in conservation. This takes into account if those commercial sectors agree to commit to cooperate and carry out collaborative effort in line with social/environmental responsibility in their fundamental projects and policies. This is mainly since there is no agreement to secure the market failure

or market monopoly on biological resources and biodiversity. Hence, this statehood paradigm cannot be achieved.

The Earth Charter signifies as a *prima facie* draft legal document and includes the eco-covenantal character in itself. For international law, this Charter known as 'people-treaty' reflects the concept of environmental constitutionalism that seeks to dilute some high tensions of unconditionally territorial sovereignty over the earth biodiversity commons via the concept of trusteeship. This is by holding the earth commons in trust for future generations and for their own citizens, nation states acting as the trustee who have fiduciary obligation to govern their biotic resources on behalf of the Earth. Based on the common heritage doctrine the environmental trusts can be created by eco-covenantal agreement. Ethical norms of trust advance a strong point that state becomes as the trustee for the earth commons, rather than the owner of terrain. This approach has brought a sense of unity for the earth environment instead of separation. Scholars explain that trust agreement does not challenge sovereignty rather it is an expression of public trust functions. As a framework of the global ethic, the Earth Charter provides fundamental principles as guidelines for the transformative approach via shifting the old paradigm of statehood system to global governance for sustainability.

2. Outlook

Our environmental movement process for conserving the earth biodiversity in the biosphere ought not be backward, although it has encountered international political obstacles throughout the previous forty years. The improvement of scientific understandings on the earth ecosystem have been recognized and promoted in many European nations. Since the global community has already witnessed governance for sustainability such commitment must be kept and put forward.[1337]

From covenantalism to constitutionalism, the ecological covenantalism could move us toward the two possible pictures of a global environmental constitutionalism[1338] and its institution. In addition, the Earth Charter provides the core principles for them.[1339] The way forward can be seen as similar to international labour organization and ILO's constitution, only in a different paradigm. According to E.B. Weiss, there are over 700 commitments with regard to certain actions to take that were enumerated at the Rio+20 Conference.[1340] Although this notion of anthropocentric compact may hold these commitments with some concern and trepidation regarding possible mutual benefit, eco-covenant holds them with a sacred trust. Even so, it is necessary to ask the question in terms of overall responsibility for Earth, rather than in terms of the rights of individuals. What types of commitments are these? The eco-covenant approach refers to a

[1337] Anastasia Telesetsky “An emerging legal principle to restore large-scale ecoscape" in Christina Voigt (ed) *Rule of Law for Nature* (Cambridge University Press, 2013) at 186.
[1338] Kotzé J. Louis "Arguing Global Environmental Constitutionalism" (2012) *1 Transnational Environmental Law* 1 at [199-233].
[1339] Bosselmann "Outlook: The Earth Charter-a Model Constitution for the World?" above 1176, at [249-251].
[1340] E.B. Weiss "Rule of Law for Nature in a Kaleidoscopic World" in Christina Voigt (ed) *Rule of Law for Nature* (Cambridge University Press, 2013) at 41.

solemn commitment holding Earth and its components in trust for all future generations and other life forms with care obligations. The greatest responsibility is now lying in both hands of today's generation to pass on the ecological integrity of the Earth's biodiversity commons to the next generation, and by the rhythm of nature to carry on or die out. It is a way that embraces inclusivity in that all life forms are supposed to be able to live in such a way that embodies a creative Creation.

Recognition of the eco-covenant has been captured in the Earth Charter and several numbers of documents focusing on environmental commitments and previously agreed upon goals of ecological sustainability exist. The solemn commitments are not new rather they are very old and have been in existence since the beginning of human civilization. The eco-covenant principles are also found in several major belief systems all over the world. While some communities protect the eco-covenant in the form of customary rules, or local law, others regard them as sacred values and recognize them at the supreme position. The rights of Mother Earth have currently been codified in some domestic constitutions in Latin American countries. Therefore, the eco-covenant dialogue serves as the spiritual and moral authority for fundamental political agreements such as in national constitutions and international human rights law. As discussed, the traditional covenant notion is represented as a fundamental principle of the traditional constitution law that could allow for adding the idea of constitutionalism into the further debate at the international law and related level.

There are two constructing patterns of the global environmental constitutionalism and its institution. The first model, proposed by the UN in the 2012 Rio+20 Conference, is the UN proposal on "the World Environmental Constitution: Toward a Sustainable Future." [1341] The second model is suggested by the global civil societies which can be viewed in the Earth Charter initiative. Both have addressed their themes in a different pattern. From the traditional legal positivists, the primary sources of constitutional principles could be collected from the common legal norms based on domestic constitutions. For example, they may search for the Rights of Nature or the environmental rights that are codified in constitutional law all over the world. Then, those principles would be applied and claimed to have legitimacy as a common ground in terms of global environmental constitutionalism. These could be codified based on a compact notion to secure the commitment. From the perspective of traditional legal naturalists, some sources of constitutional principles may invoke religious sources it is noted that those legal and moral norms are restricted by the framework the anthropocentric paradigm. Throughout this thesis, as has been discussed, that is, the less than positive attitude of neo-liberalism toward ecological-covenant. Several arguments highlighted some of the main concerns regarding the biodiversity neo-liberalist approach to frame the Earth's biodiversity commons. This UN dialogue based on a state-center approach has allowed the control of those basic human needs into the hands of a few hegemonies. Certain powerful states and the powerful biotech corporations are in privileged positions. However, other

[1341] Sustainable Development Knowledge Platform "World Environmental Constituion: A tool for urgent transformation" (2 March 2013) <http://uncsd2012.org> .

small states and most global citizens are and have been silenced. In terms of the eco-covenantal principles that are applied in the Earth Charter which allow for the Earth's hierarchy to be respected, humanity is placed back to the Earth's sovereignty. Until the present, the rule of law for natural reality, captured in several traditional belief systems has, in effect, governed human communities. Those eco-covenant principles could serve as the fundamental principles for global environmental constitutionalism.

From the global civilian model based on the Earth Charter, the guideline points in the direction of the transformative approach. As discussed, several well-known scholars in this field suggest that the function of state-trusteeship is necessary. The notion of trusteeship was once applied via the UN Trusteeship Council on behalf of newly independent states after WWII.[1342] Similar to the former Trusteeship Council, if it were to be established, the “Commons Trust” Institution[1343] would include global civil societies such as the IUCN, WWF, and Greenpeace as a part of its members. Thus, the key role of institution would hold the earth's biodiversity commons in trust and care for Earth and the rest of nature that have not yet had legal standing and representation. The eco-covenant notion provides for legitimacy standing to the Institution in both legal and moral obligations. Eco-covenant derives from the legal and moral norms that have existed and are practiced in several human communities around the world. Earth has its own inherent rights and such rights cannot be violated whether or not humans attempt at justification as those rights already exist. Eco-covenantal people represent global citizenship. It is undeniable that at the moment that we are born, we live in Earth's boundaries. Those who put forward self-commitment to take responsibility to a low impact to Mother Earth and recognize her rights could be identified as our global citizenship. Since the biodiversity neo-liberalism has transited globally through the free market, as well as private property rights receiving certain protections via international law across political borders, responsibility is delimited within state-boundaries. Although the individual nationality remains within the original state of birth, ecological responsibility is globalization. In terms of the collective parts of global governance for sustainability, these eco-covenant people have formed a group, which is referred to as global civil society. On an international level, global civil society increases the voice of those people who are for the most part silent against the Biotech hegemony under the eco-covenantal principles. Hence, the choice to grow organic crops and to collect and keep their own seeds without GM contamination must be protected by law. Under this global eco-covenant governance, global civil societies will become as a partnership with governments and businesses to move forward to global governance for sustainability.

[1342] *Renewing the United Nations: a Programme for Reform* UN GA/51/950 (1997).
[1343] Weston and Bollier, above n 160, at [193-195], [248-249].

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APPENDIX

THE EARTH CHARTER 2000

PREAMBLE

We stand at a critical moment in Earth's history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognize that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations.

EARTH, OUR HOME

Humanity is part of a vast evolving universe. Earth, our home, is alive with a unique community of life. The forces of nature make existence a demanding and uncertain adventure, but Earth has provided the conditions essential to life's evolution. The resilience of the community of life and the well-being of humanity depend upon preserving a healthy biosphere with all its ecological systems, a rich variety of plants and animals, fertile soils, pure waters, and clean air. The global environment with its finite resources is a common concern of all peoples. The protection of Earth's vitality, diversity, and beauty is a sacred trust.

THE GLOBAL SITUATION

The dominant patterns of production and consumption are causing environmental devastation, the depletion of resources, and a massive extinction of species. Communities are being undermined. The benefits of development are not shared equitably and the gap between rich and poor is widening. Injustice, poverty, ignorance, and violent conflict are widespread and the cause of great suffering. An unprecedented rise in human population has overburdened ecological and social systems. The foundations of global security are threatened. These trends are perilous—but not inevitable.

THE CHALLANGES AHEAD

The choice is ours: form a global partnership to care for Earth and one another or risk the destruction of ourselves and the diversity of life. Fundamental changes are needed in our values, institutions, and ways of living. We must realize that when basic needs have been met, human development is primarily about being more, not having more. We have the knowledge and technology to provide for all and to reduce our impacts on the environment. The emergence of a global civil society is creating new opportunities to build a democratic and humane world. Our environmental, economic, political, social, and spiritual challenges are interconnected, and together we can forge inclusive solutions.

UNIVERSAL RESPONSIBILITY

To realize these aspirations, we must decide to live with a sense of universal responsibility, identifying ourselves with the whole Earth community as well as our local communities. We are at once citizens of different nations and of one world in which the local and global are linked. Everyone shares responsibility for the present and future well-being of the human family and the larger living world. The spirit of human solidarity and kinship with all life is strengthened when we live with reverence for the mystery of being, gratitude for the gift of life, and humility regarding the human place in nature. We urgently need a shared vision of basic values to provide an ethical foundation for the emerging world community. Therefore, together in hope we affirm the following interdependent principles for a sustainable way of life as a

common standard by which the conduct of all individuals, organizations, businesses, governments, and transnational institutions is to be guided and assessed.

PRINCIPLES

I. RESPECT AND CARE FOR THE COMMUNITY OF LIFE

1. Respect Earth and life in all its diversity.

a. Recognize that all beings are interdependent and every form of life has value regardless of its worth to human beings.

b. Affirm faith in the inherent dignity of all human beings and in the intellectual, artistic, ethical, and spiritual potential of humanity.

2. Care for the community of life with understanding, compassion, and love.

a. Accept that with the right to own, manage, and use natural resources comes the duty to prevent environmental harm and to protect the rights of people.

b. Affirm that with increased freedom, knowledge, and power comes increased responsibility to promote the common good.

3. Build democratic societies that are just, participatory, sustainable, and peaceful.

a. Ensure that communities at all levels guarantee human rights and fundamental freedoms and provide everyone an opportunity to realize his or her full potential.

b. Promote social and economic justice, enabling all to achieve a secure and meaningful livelihood that is ecologically responsible.

4. Secure Earth's bounty and beauty for present and future generations.

a. Recognize that the freedom of action of each generation is qualified by the needs of future generations.

b. Transmit to future generations' values, traditions, and institutions that support the long-term flourishing of Earth's human and ecological communities.

II. ECOLOGICAL INTEGRITY

5. Protect and restore the integrity of Earth's ecological systems, with special concern for biological diversity and the natural processes that sustain life.

a. Adopt at all levels sustainable development plans and regulations that make environmental conservation and rehabilitation integral to all development initiatives.

b. Establish and safeguard viable nature and biosphere reserves, including wild lands and marine areas, to protect Earth's life support systems, maintain biodiversity, and preserve our natural heritage.

c. Promote the recovery of endangered species and ecosystems.

d. Control and eradicate non-native or genetically modified organisms harmful to native species and the environment, and prevent introduction of such harmful organisms.

e. Manage the use of renewable resources such as water, soil, forest products, and marine life in ways that do not exceed rates of regeneration and that protect the health of ecosystems.

f. Manage the extraction and use of non-renewable resources such as minerals and fossil fuels in ways that minimize depletion and cause no serious environmental damage.

6. Prevent harm as the best method of environmental protection and, when knowledge is limited, apply a precautionary approach.

a. Take action to avoid the possibility of serious or irreversible environmental harm even when scientific knowledge is incomplete or inconclusive.

b. Place the burden of proof on those who argue that a proposed activity will not cause significant harm, and make the responsible parties liable for environmental harm.

c. Ensure that decision making addresses the cumulative, long-term, indirect, long distance, and global consequences of human activities.

d. Prevent pollution of any part of the environment and allow no build-up of radioactive, toxic, or other hazardous substances.

e. Avoid military activities damaging to the environment.

7. Adopt patterns of production, consumption, and reproduction that safeguard Earth's regenerative capacities, human rights, and community well-being.

a. Reduce, reuse, and recycle the materials used in production and consumption systems, and ensure that residual waste can be assimilated by ecological systems.

b. Act with restraint and efficiency when using energy, and rely increasingly on renewable energy sources such as solar and wind.

c. Promote the development, adoption, and equitable transfer of environmentally sound technologies.

d. Internalize the full environmental and social costs of goods and services in the selling price, and enable consumers to identify products that meet the highest social and environmental standards.

e. Ensure universal access to health care that fosters reproductive health and responsible reproduction.

f. Adopt lifestyles that emphasize the quality of life and material sufficiency in a finite world.

8. Advance the study of ecological sustainability and promote the open exchange and wide application of the knowledge acquired.

a. Support international scientific and technical cooperation on sustainability, with special attention to the needs of developing nations.

b. Recognize and preserve the traditional knowledge and spiritual wisdom in all cultures that contribute to environmental protection and human well-being.

c. Ensure that information of vital importance to human health and environmental protection, including genetic information, remains available in the public domain.

III. SOCIAL AND ECONOMIC JUSTICE

9. Eradicate poverty as an ethical, social, and environmental imperative.

a. Guarantee the right to potable water, clean air, food security, uncontaminated soil, shelter, and safe sanitation, allocating the national and international resources required.

b. Empower every human being with the education and resources to secure a sustainable livelihood, and provide social security and safety nets for those who are unable to support themselves.

c. Recognize the ignored, protect the vulnerable, serve those who suffer, and enable them to develop their capacities and to pursue their aspirations.

10. Ensure that economic activities and institutions at all levels promote human development in an equitable and sustainable manner.

a. Promote the equitable distribution of wealth within nations and among nations.

b. Enhance the intellectual, financial, technical, and social resources of developing nations, and relieve them of onerous international debt.

c. Ensure that all trade supports sustainable resource use, environmental protection, and progressive labor standards.

d. Require multinational corporations and international financial organizations to act transparently in the public good, and hold them accountable for the consequences of their activities.

11. Affirm gender equality and equity as prerequisites to sustainable development and ensure universal access to education, health care, and economic opportunity.

a. Secure the human rights of women and girls and end all violence against them.

b. Promote the active participation of women in all aspects of economic, political, civil, social, and cultural life as full and equal partners, decision makers, leaders, and beneficiaries.

c. Strengthen families and ensure the safety and loving nurture of all family members.

12. Uphold the right of all, without discrimination, to a natural and social environment supportive of human dignity, bodily health, and spiritual well-being, with special attention to the rights of indigenous peoples and minorities.

a. Eliminate discrimination in all its forms, such as that based on race, color, sex, sexual orientation, religion, language, and national, ethnic or social origin.

b. Affirm the right of indigenous peoples to their spirituality, knowledge, lands and resources and to their related practice of sustainable livelihoods.

c. Honor and support the young people of our communities, enabling them to fulfill their essential role in creating sustainable societies.

d. Protect and restore outstanding places of cultural and spiritual significance.

IV. DEMOCRACY, NONVIOLENCE, AND PEACE

13. Strengthen democratic institutions at all levels, and provide transparency and accountability in governance, inclusive participation in decision making, and access to justice.

a. Uphold the right of everyone to receive clear and timely information on environmental matters and all development plans and activities which are likely to affect them or in which they have an interest.

b. Support local, regional and global civil society, and promote the meaningful participation of all interested individuals and organizations in decision making.

c. Protect the rights to freedom of opinion, expression, peaceful assembly, association, and dissent.

d. Institute effective and efficient access to administrative and independent judicial procedures, including remedies and redress for environmental harm and the threat of such harm.

e. Eliminate corruption in all public and private institutions.

f. Strengthen local communities, enabling them to care for their environments, and assign environmental responsibilities to the levels of government where they can be carried out most effectively.

14. Integrate into formal education and life-long learning the knowledge, values, and skills needed for a sustainable way of life.

a. Provide all, especially children and youth, with educational opportunities that empower them to contribute actively to sustainable development.

b. Promote the contribution of the arts and humanities as well as the sciences in sustainability education.

c. Enhance the role of the mass media in raising awareness of ecological and social challenges.

d. Recognize the importance of moral and spiritual education for sustainable living.

15. Treat all living beings with respect and consideration.

a. Prevent cruelty to animals kept in human societies and protect them from suffering.

b. Protect wild animals from methods of hunting, trapping, and fishing that cause extreme, prolonged, or avoidable suffering.

c. Avoid or eliminate to the full extent possible the taking or destruction of non-targeted species.

16. Promote a culture of tolerance, nonviolence, and peace.

a. Encourage and support mutual understanding, solidarity, and cooperation among all peoples and within and among nations.

b. Implement comprehensive strategies to prevent violent conflict and use collaborative problem solving to manage and resolve environmental conflicts and other disputes.

c. Demilitarize national security systems to the level of a non-provocative defense posture, and convert military resources to peaceful purposes, including ecological restoration.

d. Eliminate nuclear, biological, and toxic weapons and other weapons of mass destruction.

e. Ensure that the use of orbital and outer space supports environmental protection and peace.

f. Recognize that peace is the wholeness created by right relationships with oneself, other persons, other cultures, other life, Earth, and the larger whole of which all are a part.

THE WAY FORWARD

As never before in history, common destiny beckons us to seek a new beginning. Such renewal is the promise of these Earth Charter principles. To fulfill this promise, we must commit ourselves to adopt and promote the values and objectives of the Charter. This requires a change of mind and heart. It requires a new sense of global interdependence and universal responsibility. We must imaginatively develop and apply the vision of a sustainable way of life locally, nationally, regionally, and globally. Our cultural diversity is a precious heritage and different cultures will find their own distinctive ways to realize the vision. We must deepen and expand the global dialogue that generated the Earth Charter, for we have much to learn from the ongoing collaborative search for truth and wisdom. Life often involves tensions between important values. This can mean difficult choices. However, we must find ways to harmonize diversity with unity, the exercise of freedom with the common good, short-term objectives with long-term goals. Every individual, family, organization, and community has a vital role to play. The arts, sciences, religions, educational institutions, media, businesses, nongovernmental organizations, and governments

are all called to offer creative leadership. The partnership of government, civil society, and business is essential for effective governance. In order to build a sustainable global community, the nations of the world must renew their commitment to the United Nations, fulfill their obligations under existing international agreements, and support the implementation of Earth Charter principles with an international legally binding instrument on environment and development. Let ours be a time remembered for the awakening of a new reverence for life, the firm resolve to achieve sustainability, the quickening of the struggle for justice and peace, and the joyful celebration of life.
