Università
Ca'Foscari
Venezia

Master's degree in

Comparative International Relations

Final Thesis

Biodiversity, wilderness and the protection of the African elephant population in international law

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Academic Year
2018 / 2019

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ABSTRACT

La Terra è la nostra casa, così come lo è per milioni di altre specie e organismi. La variabilità degli esseri viventi appartenenti ad una specie, così come la variabilità fra specie diverse e fra ecosistemi viene chiamata Biodiversità.

La Terra infatti è formata da una vasta rete di ecosistemi con i quali le varie specie interagiscono e dalle cui interazioni derivano i cosiddetti "servizi ecosistemici" come la purificazione dell'acqua, la generazione di ossigeno, la regolazione del clima, la pollinazione, la dispersione di semi e tanti altri.

Da ciò si intuisce che le specie, sia animali che vegetali, ricoprono un ruolo fondamentale per il funzionamento degli ecosistemi dai quali tutte le specie, umani inclusi, derivano le risorse e le funzioni fondamentali che rendono la vita sulla terra possibile.

Purtroppo però molte specie sono in pericolo: attualmente è in corso quella che viene definita la sesta estinzione di massa, con più di 28,000 specie minacciate di estinzione. È stato riportato che la perdita attuale di specie sarebbe accaduta in 10,000 anni e ciò che rende questa estinzione ancora più grave è che la causa scatenante è considerata l' *Homo sapiens* ed il suo sconsiderato uso delle risorse naturali e dell'ambiente.

Infatti, alcune delle cause che stanno esacerbando il fenomeno dell'estinzione di massa sono la distruzione degli habitat, il riscaldamento globale, lo sfruttamento eccessivo delle risorse, l'inquinamento e la diffusione di specie invasive che soppiantano le specie locali.

Considerando le minacce a cui la biodiversità e in particolare le specie sono sottoposte, la comunità internazionale negli anni ha sviluppato strumenti come Convenzioni per tutelare la biodiversità. Fra le suddette Convenzioni, ci sono le quattro più rilevanti a livello globale, data la loro aderenza quasi universale, che verranno analizzate in questa tesi che sono la Convenzione UNESCO per la tutela dei beni culturali e naturali, la Convenzione per il commercio internazionale in specie animali e vegetali in pericolo (CITES), la Convenzione per la protezione delle specie migratorie (CMS) e infine la Convenzione per la protezione della Biodiversità (CBD).

Considerando il fatto che questi strumenti sono stati sviluppati tra gli anni ’70 e ’90 del novecento, si possono osservare i primi risultati.

Per questo la domanda che questo studio si pone è proprio relativa all’efficacia di questi strumenti nel proteggere le specie. Per compiere una tale valutazione, è stato selezionato come caso studio una specie, l’elefante Africano, monitorando l’andamento della popolazione in quattro stati che hanno ratificato tutte le Convenzioni, guardando alle misure che hanno preso per proteggere la specie e come le hanno applicate. I quattro stati in questione sono il Gabon e la repubblica Popolare del Congo per gli elefanti della foresta, il primo con popolazione crescente e il secondo con popolazione decrescente, mentre per gli elefanti della savana sono stati selezionati lo Zimbabwe e la Tanzania anch’essi in cui il primo con popolazione crescente e il secondo decrescente.

In particolare, sono stati scelti gli elefanti perché sono una specie molto a rischio, protetti da tutti gli strumenti analizzati e la cui gestione coinvolge problematiche come il bracconaggio, la perdita del territorio, il conflitto uomo-elefante e la scarsità di risorse.

L’ipotesi iniziale è che i paesi la cui popolazione è crescente abbiano sviluppato misure appropriate per dare attuazione alle Convenzioni e le stiano applicando efficacemente, mentre i paesi con popolazione decrescente probabilmente stanno incontrando delle difficoltà nel sviluppare e attuare le norme come richiesto dalle Convenzioni.

Nel dettaglio, questo studio si compone di tre capitoli: nel primo verrà introdotta cos’è la biodiversità e perché è importante, descrivendo le motivazioni per cui va protetta che in particolare sono ragioni etiche, ecologiche ed economiche.

Si prosegue poi descrivendo le minacce che riguardano la biodiversità nonché un breve excursus storico sulla formazione di importanti istituzioni ed organizzazioni a tutela dell’ambiente, che hanno poi dato vita alle Convenzioni analizzate. Il capitolo infatti continua con la descrizione approfondita di questi strumenti, illustrando come sono composti e come funzionano, le misure che vengono richieste agli stati membri per implementare la Convenzione e infine un discorso circa la loro efficacia a livello globale.

Questa prima parte ha lo scopo di introdurre ai lettori le problematiche legate alla perdita della biodiversità che hanno spinto la comunità internazionale ad agire e ad apprendere come funzionano gli strumenti attualmente in atto, informazioni che saranno utili per comprendere

le parti successive di questo elaborato, come l'ultima parte, dove si guarderà nel dettaglio le misure che quattro paesi in particolare hanno adottato per attuare le Convenzioni.

Il secondo capitolo illustra invece la difficile situazione degli elefanti in Africa, soffermandosi su quelle che sono le principali minacce a cui sono sottoposti per poi proseguire con una breve panoramica del trend della popolazione a livello continentale con dati che vanno dal 1995 and 2016.

Questa parte poi prosegue descrivendo l'importante distinzione tra elefanti della savana ed elefanti della foresta, documentata da uno studio del 2010 ma non ancora riconosciuta da tutti gli strumenti analizzati e da tutte le organizzazioni che si occupano di conservazione. Di fatto, riconoscere la differenza tra le due specie è di fondamentale importanza dato che, come diversi ecologisti hanno dimostrato nelle loro ricerche, vanno conservate e gestite in maniere differenti a causa delle loro diverse esigenze, comportamenti e ambienti in cui vivono.

La sezione si conclude discutendo brevemente sui principali motivi per cui è importante proteggere questa specie, che sono di natura etica ma soprattutto ecologica, dato che entrambi questi elefanti interagiscono con il territorio, contribuendo alla sua stabilità e mantenimento. Questo capitolo serve a fornire ulteriori dettagli circa la drammatica situazione che vivono gli elefanti e la necessità che gli strumenti attualmente in funzione siano efficacemente applicati per offrire una protezione adeguata a questa specie.

L'ultimo capitolo si propone a questo punto di analizzare, come precedentemente menzionato, come esattamente queste Convenzioni vengono messe in pratica in quattro stati che ospitano sul loro territorio popolazioni di elefanti e, attraverso l'andamento dei trend delle popolazioni in ciascuno di questi paesi, capire se le misure attuate da questi paesi siano efficaci o meno nel garantire la protezione di cui avrebbero bisogno per prosperare.

INTRODUCTION

The Earth is our home, but it is also home to innumerable other species, many of whom are still unknown. Every bacteria, fungi, plant, insect, and animal is part of biodiversity. In fact, biodiversity can be seen as "the variety of life, in all of its many manifestations. 'It is a broad unifying concept, encompassing all forms, levels, and combinations of natural variation, at all level of biological organization'"[1]. As it will be explained in the first chapter of this dissertation, it has become increasingly important to have a more concise definition of what Biodiversity is. One of the most accredited definitions is the one given by the Convention on Biological Diversity, which is "the first international treaty explicitly to address all aspects of biodiversity"[2] provides a globally established definition of biodiversity:

Biological diversity means 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.[3]

The planet is made of a very complex network of integrated ecosystems[4], and its complexity is strictly linked to the presence of biodiversity. Therefore, more species are needed to exploit the many combinations of environmental variables[5].

In particular, species play an active and fundamental role in the maintenance of ecosystems, under innumerable points of view: for example, as explained by Sekercioglu, there are species that act as "Mobile Links", which through pollination, seed dispersal and migration connect habitats and ecosystems, thus increasing their resilience[6] and maintaining their

[1] Kevin J. Gaston "Biodiversity" in Navjot S., Ehrlich R. (eds.) "*Conservation Biology for all",* Oxford, 2010, pp. 27-42
[2] Bowman M., Redgwell C., "introduction", in Bowman M., Redgwell C. (eds) " *International Law and the Conservation of Biological Diversity"* London, 1996, p. 1.
[3] Convention on Biological Diversity, art. 2.
[4] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 45.
[5] Ibidem, pp. 53.
[6] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 47.

status. Seed dispersal is one of the most important functions of mobile species, like elephants[7], as will be displayed in the second chapter of this study.

However, with more than 28,000 species threatened with extinction at the present day[8], the Earth is facing its sixth mass extinction, with the subsequent and inevitable deterioration of ecosystems complexity and services. The current extinction is driven by human-correlated factors[9] such as habitat destruction, global warming, overexploitation, pollution and the spread of invasive species.

Considering how biodiversity and animal species conservation is important and the threats they are facing, over the years the international community felt the need to act and establish international organizations as well as developing binding instruments to protect biodiversity and animals. Among these instruments there are the four almost universal biodiversity-related Conventions that will be assessed in this study, which are the World Cultural and Natural Heritage (UNESCO Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals (CMS), and the Convention on Biological Diversity (CBD). These Conventions have been established between the 1970s and the 1990s, therefore they have been in place from a fairly long period of time.

For this reason, the research question this study attempts to address is whether these Conventions are actually effective in protecting species and in particular African elephants. In fact, to carry out this assessment, African elephants have been chosen as a case study given that their management and protection is very complex, involving various issues like poaching, habitat loss, human-elephant conflict, poverty, corruption, national development needs and lack of funding, all elements that require a considerable effort in order to properly conserve them.

In particular, four elephant range States have been chosen to carry out the Conventions' assessment, looking at the measures these countries implemented at the national level,

[7] John R. Poulsen, "Ecological consequences of forest elephant declines for Afrotropical forests", Conservation Biology, 2017, Volume 00.

[8] IUCN 2019. The IUCN Red List of Threatened Species. Version 2019-2. http://www.iucnredlist.org.

[9] Gerardo Ceballos et Al, "Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines", PNAS, 2017.

checking also the population trend in their territory. The countries analyzed are Gabon, Democratic Republic of the Congo (from now on DRC), the United Republic of Tanzania and Zimbabwe. In particular, Gabon and DRC have been chosen because they host big populations of forest elephants: in the first country the population is increasing, while in the second one it is decreasing. On the other hand, the United Republic of Tanzania and Zimbabwe are among the countries with the biggest savanna elephants population, having Tanzania a declining population while Zimbabwe record an increasing population. These differences are useful to highlight differences in elephants' management among countries.

In detail, this study is composed of three chapters. The first one will begin with a brief definition of biodiversity, why it is important, and the threats to biodiversity and species, introducing four of the most important global-effective Conventions for biodiversity and species conservation. These analyzed Conventions are, as mentioned before, the Convention concerning the protection of the World Cultural and Natural Heritage (UNESCO Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Convention on the Conservation of Migratory Species of Wild Animals (CMS) and the Convention on Biological Diversity (CBD).

The second chapter instead describes in detail the plight of the elephants, describing the threats they are exposed to, in particular poaching, habitat loss and human-elephant conflict. It will then be described the population trend at the continental level from 1995 to 2016 to monitor how the population numbers changed over time given the threats these species are suffering from.

This chapter also includes a description of the role of the elephants both in the forest and in savanna and their fundamental contribution to maintain the ecosystems and the environment in which they live, reasons why these species are fundamental to protect.

Finally, the last chapter describes in depth how the selected range States implemented the four analyzed Conventions. This dissertation will look at the most relevant national legislation put in place to comply with the Conventions' requirement to then carry out the efficacy assessment looking at elephant populations data. In the end, conclusions will be

driven, to subsequently propose solutions to enhance elephant population conservation and foster law-enforcement in range States.

CHAPTER I
BIODIVERSITY AND ANIMAL PROTECTION IN INTERNATIONAL LAW

1 Biodiversity: what it is and why it is important

The Earth is our home, but it is also home to innumerable other species, many of whom are still unknown. Every bacteria, fungi, plant, insect, and animal is part of Biodiversity. In fact, Biodiversity can be seen as "the variety of life, in all of its many manifestations. 'It is a broad unifying concept, encompassing all forms, levels, and combinations of natural variation, at all level of biological organization'"[10]. However, since concise definitions are needed to make broad concepts clearer, the Convention on Biological Diversity, which is "the first international treaty explicitly to address all aspects of biodiversity" [11] provides a globally established definition of Biodiversity:

Biological diversity means 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.[12]

The diversity of species on Earth has been created over millions of years of evolution – a process to which humans have contributed more recently too. UNESCO and UNEP (2002) state:

[10] Kevin J. Gaston "Biodiversity" in Navjot S., Ehrlich R. (eds.) "*Conservation Biology for all",* Oxford, 2010, pp. 27-42
[11] Bowman M., Redgwell C., "introduction", in Bowman M., Redgwell C. (eds) " *International Law and the Conservation of Biological Diversity"* London, 1996, p. 1.
[12] Convention on Biological Diversity, art. 2.

"There is a mutual dependency between biological diversity and culture. On the one hand, innumerable cultural practices depend upon specific elements of biodiversity for their continued existence and expression. On the other hand, significant ensembles of biological diversity are developed, maintained and managed by cultural groups, with language and knowledge as the media for their management"[13].

The report continues that "even the Amazonian rain forest, considered by many as the ultimate expression of pristine wilderness, has been shaped during millennia by the deliberate interventions of indigenous peoples".[14] The importance of the involvement of local communities and indigenous people is actually a very important aspect of conservation that has been included, as will be discussed later, in the Convention of Biological Diversity[15].
More in detail, Biodiversity can be divided in three categories[16]: genes, species and ecosystems. Genetic diversity is variation in genes within and between species, while species diversity is the "variety of species within a region"[17]. At the present time, 1.75 million species have been identified and described out of an estimated 5-30 million species[18]. Therefore, the great majority of species on Earth is still unknown, with the largest number of species living in the tropics[19]. Most biodiversity hotspots, which are areas with significant levels of biodiversity that are threatened with destruction, occur in the tropics[20]. Finally, ecosystems diversity is the difference between habitats, biotic communities and ecological processes. Ecosystems are identified as "a dynamic complex of plant, animal, and micro-organism communities and their non-living environment interacting as a functional unit"[21].

[13] A jointly convened UNESCO and UNEP high-level Roundtable held on 3 September 2002 in Johannesburg during the World Summit on Sustainable Development available at: http://wedocs.unep.org/bitstream/handle/20.500.11822/13741/Cultural_Diversity_and_Biodiversity.pdf?sequence=2&isAllowed=y.
[14] Ibidem.
[15] Convention on Biological Diversity, art. 8 j.
[16] WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992.
[17] Ibidem.
[18] Baakman K., *Testing times: the effectiveness of five international biodiversity-related Conventions*, The Netherlands, Wolf Legal Publishers, 2011, p.7.
[19] Kunich J. C., *Ark of the broken covenant protecting the world's biodiversity hotspots*, London, 2003, p. 7
[20] Ibidem, p. 35.
[21] Convention on Biological Diversity, art. 2.

It seems clear that there is a wide presence of biodiversity on Earth, which is increasingly threatened by human activities: as it will be illustrated in the following paragraphs, historically economic development has been prioritized over preserving biodiversity, a trend that costed the loss of a great amount of species and the detriment of ecosystems. According to Jeffrey A. McNeelly[22]:

The loss of biodiversity should be seen as a ripping apart […] of the fabric of our living world and the destruction of the machinery that makes our unique planetary home function. Only someone unaware […] could conceivably view this destruction with indifference, because it will profoundly affect each of us […] and our planet for as long as our species exists.[23]

Considering what has been described above, for the purpose of this study, the question that should be asked is: "why protect species?". The reasons are ethical, ecological and finally economic. Human beings, more specifically countries and policy-makers, tend to first pursue their direct interests (predominately economic interests) and only later consider the ethical, moral and ecological implications of their activities. Anthropocentrism, introduced later at the end of this chapter, has been the dominant approach to protection[24] of biodiversity and other non-human species but in this study it is argued that to effectively conserve species, ethical and ecological considerations must proceed economic ones, which most of the time are detrimental to conservation.

[22] In 1998, Jefrrey A. Mcnelly was the Chief Scientist and Director of the Biodiversity Programme at the World Conservation Union (IUCN) and is internationally recognized as a leader in the field of biodiversity.
[23] Peter H. Raven and Jeffrey A. McNeelly "Biological Extinction: its scope and meaning for us" in Lakshman D. Guruswamy and Jeffrey A. McNeelly (eds.) "*Protection of Global Biodiversity",* Durham and London, 1998, pp. 21.
[24] Adams R., *"Elephant treaties: the colonial legacy of the biodiversity crisis",* Hanover and London, 2004, pp 11.

1.1 Ethical and moral reasons to protect species and biodiversity

From an ethical and moral perspective, even though human beings constitute the predominant species on this planet, we are one species among the millions of others on Earth with the right to survive, as the *ecocentrism* philosophy sustains: "ecocentrism refers to a nature-centered system of values that denies hierarchical divisions that prioritize humans above nonhuman flora and fauna, and instead sees humans and nonhumans as equally deserving justice and rights to life"[25]. About this matter, I would like to recall the being "subjects-of-a-life" philosophical concept. Being a subject-of-a-life is a condition that associates all species, both humans and non-human animals, sustaining that we are all in the world and all aware of it, caring for what happens to us since it can affect the quality and duration of our life[26]. This theory sustains that through this shared perception of the world, we are all equal with an intrinsic right to be treated with respect[27].

This approach is diametrically opposed to the so called *New Conservation Science* (NCS) which sustains that humans needs have the priority over nature's ones and that "the primary objective of conservation should be enhancing the services that nature provides to people"[28]. In particular, as it can be read in Shoreman-Ouimet's study, NCS aims at replacing "the ethical commitment of conservation with one dedicated only to the economic prosperity of humans"[29]. However, as the dominant species, humans have a moral responsibility to allow other species to persist by not exploiting them to the brink of extinction for economic or selfish pursuits[30]. In fact, as reported in an article of The Guardian, David Attenborough[31] affirmed that as humans we have a responsibility to the other life forms on our planet given

[25] Shoreman-Ouimet E., Kopnina H., "Culture and Conservation, beyond anthropocentrism", London and New York, 2016, pp.7.
[26] Regan T., "Sentience and Rights", in Jacky Turner and Joyce D'silva (eds.) "Animals, ethics and trade. The challenge of animal sentience", USA and UK, 2006.
[27] Ibidem.
[28] Ibidem.
[29] Ibidem.
[30] See the example of cheetahs being bought by ultrarich people – CNN article available at https://www.cnn.com/2019/08/28/africa/somaliland-cheetahs-gulf-intl/index.html - Last access: 09/11/2019
[31] David Attenborough is a renowned British natural historian famous for presenting the natural history documentary series LIFE, documenting animal and plant life on Earth.

we have power over them and the historian even added that we need to protect species to ensure the planet's health[32].

Like other species, humans benefit from natural resources, including space and energy, to satisfy their needs, but our right to exploit stops at the point at which our activities destroy life. As Karin Baakman[33] underlines on her book:

"a strong argument for defending the protection of biodiversity is the ethical argument that humans are responsible for the well-being of all other species on the planet and do not have the right to destroy life on Earth. The presumption of this non-anthropocentric argument is that species and ecosystems have an independent right to continue their existence"[34]

Similarly, the World Charter for Nature, a non-binding instrument created by the United Nations in 1982, states in its "General Principles" the need to respect Nature and the genetic variability on Earth: "the population levels of all life-forms, wild and domesticated, must be at least sufficient for their survival" adding also that "both land and sea shall be subject to these principles of conservation"[35].

Connected to this ethical principle but slightly more anthropocentric in its conception, is the idea that biodiversity and animals should be preserved for the sake of future generations[36] so that they have the same opportunity to enjoy Nature's beauty. This concept is also reported, for example, in the Bern Convention on the Conservation of European Wildlife and Natural habitats[37].

Another important ethical and moral reason that involves animals in particular and their protection is animal sentience.

[32] "Should we give up half of the Earth to wildlife?", The Guardian, 17/02/2018.

[33] Karin Baakman is PhD student at Tilburg University- her dissertation focused on the effectiveness of five international biodiversity-related conventions, among which the World Heritage Convention. Her assessment data refer to the year 2011 and before.

[34] Baakman K., "Testing times: the effectiveness of five international biodiversity-related Convention", pp 10

[35] World Charter for Nature, 1982.

[36] Convention on Biological Diversity preamble and art 2.

[37] Bern Convention on the Conservation of European Wildlife and Natural habitats, preamble.

To be sentient means to have the ability to have feelings, a capacity that involves awareness and cognitive ability[38]. Human beings use live animals in different industries and sectors, such as in the production of meat, milk, eggs and scientific research, and many researchers during the years carried out a conspicuous number of studies wondering whether animals suffer and experience emotions such as fear, happiness, sadness as well has if they are intelligent begins. Scientific results (and logic too) so far proved that yes, animals can experience such feelings. As Andrew Linzey[39] explains:

"Animals and humans exhibit a common ancestor, show similar behavior and have physiological similarities. Because of these triple conditions, these shared characteristics, it is perfectly logical to believe that animals experience many of the same emotions as humans. Logic tells us this"[40]

Animal behavior is actually more complex than what originally thought, thus humans are not the only creature on this planet with the ability to feel to the point where "there is no sharp line between the human animal and the rest of the animal kingdom. It is a blurred line and becoming more so all the time"[41]. Everyone who was lucky enough to spend some time with animals such as dogs, cats, mice and of course farm animals like cows, sheep, horses too noticed their ability to behave accordingly to the stimulus they received, showing love, anger, empathy to the point where I personally had the strong feeling that we humans can learn a lot from animals and their behavior.

It is precisely this blurred line between us and them that is raising many ethical and moral questions to the way we use animals and how we treat them as well as and increasing demand for animals' protection, to the point where civil society also acted to ensure higher welfare standards: an example is the European Union legislation banning trade in seal products due

[38] Broom D. M., "Considering animals' feelings", Animal Sentience, 2016.

[39] Andrew Linzey is a member of the Faculty of Theology in the University of Oxford and holds the world's first post in Ethics Theology and Animal Welfare – the Bede Jarrett Senior Research Fellowship at Blackfriars Hall, Oxford.

[40] Linzey A., "what prevents Us from Recognizing Animal Sentience?", in Jacky Turner and Joyce D'silva (eds.) "Animals, ethics and trade. The challenge of animal sentience", USA and UK, 2006.

[41] Goodall J., "The sentience of chimpanzees and other animals", in Jacky Turner and Joyce D'silva (eds.) "Animals, ethics and trade. The challenge of animal sentience", USA and UK, 2006.

to the inhumane way these animals were killed, so this legislation is based on welfare grounds and it passed thanks to public pressure conducted in many years[42].

1.2 Ecological reasons to protect species and biodiversity

Besides moral reasons, there are strong ecological reasons for conserving animals and in general biodiversity.

As previously mentioned, the planet is comprised of a vast network of integrated ecosystems[43] and the more complex an ecosystems is, the more biodiversity will increase ecosystem function, because more species are needed to exploit the many combinations of environmental variables[44]. In particular, there are several theories describing how diversity contributes to ecosystem function, productivity and survival: diversity-stability hypothesis, complementarity and the species-redundancy hypothesis. The first one sustains that since species differ in characteristics like the way they are pollinated, "diverse ecosystems are more likely to contain some species that can thrive during a given environmental perturbation and thus compensate for competitors that are reduced by that disturbance"[45].

The second hypothesis, complementarity, "occurs when species exhibit various forms of niche partitioning that allow them to capture resources in ways that are complementary in space or time, or when interspecific interactions enhance the capture of resources by species

[42] Broom D. M., "International Animal Welfare Perspectives, including whaling and inhumane seal killing as a W.T.O. Public Morality issue" in Cao D. and White S. (eds), "Animal law and welfare, international perspectives", 2016, pp. 45.
[43] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 45.
[44] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 53.
[45] Tilman D, Downing JA. Biodiversity and stability in grasslands. Nature in Sonja Knapp "The link between diversity, ecosystem functions , and ecosystem services", Springer International Publishing, 2019, pp 13.

when they are together"[46]. In both diversity-stability hypothesis and complementarity the species' different traits enhance ecosystem functioning and its stability.[47]

On the other hand, the last hypothesis, species-redundancy, presumes that "many species are similar in their traits that ecosystem functioning is independent of diversity if major functional groups are present"[48]. It can be inferred that according to this latest theory, if species are redundant to each other, a loss of species will not cause a loss of ecosystem functions. However, the research done until now highlighted that "biodiversity loss reduces the efficiency by which ecological communities capture biologically essential resources, produce biomass, decompose and recycle biologically essential nutrients"[49]. Therefore it can be inferred that biodiversity and species contributes actively to maintain ecosystems functions stable through time.

Of particular importance is to highlight that ecosystems provide "ecosystem services", which are benefits that all living creatures derive from ecosystems[50], including purification of air and water, generation of oxygen through photosynthesis, regulation and stabilization of regional climate, pollination, seed dispersal, decomposition of waste, formation of soil, nutrient storage and recycling, and absorption of pollution. Without these services, life on Earth would not be possible.

As stated before in this chapter, "most of nature's contributions are co-produced with people, but while anthropogenic assets – knowledge and institutions, technology infrastructure and financial capital – can enhance or partially replace some of those contributions, some are irreplaceable. The diversity of nature maintains humanity's ability to choose alternatives in

[46] Cardinale BJ, Wright JP, Cadotte MW, Carroll IT, Hector A, Srivastava DS, et al. Impacts of plant diversity on biomass production increase through time because of species complementarity. Proc Natl Acad Sci U S A. 2007 in Sonja Knapp "The link between diversity, ecosystem functions , and ecosystem services", Springer International Publishing, 2019, pp 13.

[47] Sonja Knapp "The link between diversity, ecosystem functions , and ecosystem services" in Matthias Schröter, Aletta Bonn, Stefan Klotz, Ralf Seppelt, Cornelia Baessler (eds.) "Atlas of Ecosystem Services : Drivers, Risks, and Societal Responses, Springer International Publishing, 2019, pp 13.

[48] Tilman D, Downing JA. Biodiversity and stability in grasslands. Nature in Sonja Knapp "The link between diversity, ecosystem functions , and ecosystem services", Springer International Publishing, 2019, pp 13.

[49] Cardinale BJ, Duffy JE, Gonzalez A, Hooper DU, Perrings C, Venail P, et al. Biodiversity loss and its impact on humanity. Nature. 2012 Sonja Knapp "The link between diversity, ecosystem functions , and ecosystem services", Springer International Publishing, 2019, pp 13.

[50] Georgina M. Mace et Al., "Biodiversity and ecosystem services: a multilayered relationship", Trends in Ecology and Evolution, 2012, vol 27.

the face of an uncertain future."[51] From this description it emerges that biodiversity loss would not only affect ecosystems functioning, but it would also affect their ability to provide for the services needed to sustain life. In fact, as pointed out by Sekercioglu:

"Global biogeochemical cycles consist of 'the transport and transformation of substances in the environment through life, air, sea, land and ice'. Through these cycles, the planet's climate, ecosystems, and creatures are tightly linked. Changes in one component can have drastic effects on another, as exemplified by the effects of deforestation on climate change"[52]

As part of biodiversity, species too play an active and fundamental role in the maintenance of ecosystems, under innumerable points of view: "Newly published research demonstrates surprising links between individual species or suites of species and ecosystem function that directly benefit people. In most cases, the links between species and function support hypotheses of the nexus of environment, economic development, and human well-being"[53].
For example, as explained by Sekercioglu, there are species that act as "Mobile Links", which are species that through pollination, seed dispersal and migration connect habitats and ecosystems, thus increasing their resilience[54] and maintaining their status. Seed dispersal is one of the most important functions of mobile species, like elephants[55], as will be displayed in the second chapter of this study. The decline of seed-dispersing species could have ecosystem-altering effects: for example, "when the elephant—a voracious vegetarian—disappeared from large areas of its traditional range in Africa, the ecosystem was altered as grasslands reverted to woodlands and woodland wildlife returned"[56].
Besides particular functions exercised by species, among species variation in functions creates stability in the ecosystems and increases the likelihood that species can adapt and

[51]Report of Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019.
[52] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 47.
[53] Gascon et Al, "The importance and Benefits of species", current biology, 2015.
[54] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 47.
[55] John R. Poulsen, "Ecological consequences of forest elephant declines for Afrotropical forests", Conservation Biology, 2017, Volume 00.
[56] WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992.

survive environmental pressures, which by consequence provides humans with opportunities to adapt to both local and global change as well.[57] It can be inferred then that both animal and plant species are key components of ecosystems and crucial in supporting life on Earth and consequently human well-being[58]. After all, humans rely on plant and animals' species for food, medicines and pharmaceutical drugs, wood and textile products. In addition, species together with genetic diversity, contribute also to control pests and diseases, to the point that farmers are turning back to methods based on species to improve crop yielding[59]. Furthermore, new research suggests that biodiversity can prevent the release of prominent carriers of human disease agents from predation and competition[60].

1.3 Economic activities involving animals and biodiversity

Natural resources contribute strongly to economic interests too, and it is precisely because of their economic relevance that regulations, both at the national but most of all at the international level, are needed.

Focusing on animals, each year, billions of wild animals are traded due to a soaring global demand for live animals as well as their derived products: globally, illegal trade constitutes one of the largest illegal businesses worth between US 8 billion to 21 billion dollars. For example, only in the US, wild species are estimated to contribute 4.5 percent of the Gross Domestic Project[61], and the economic value of domesticated species is even greater, both in agriculture and livestock industries: livestock production is in fact a growing sector and it is predicted that by 2050 it will be twice that in 2000, with 70 billion animals farmed for food each year at the present time[62].

[57] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 53 and WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992.
[58] Gascon et Al, "The importance and Benefits of species", current biology, 2015.
[59] See WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992; Gascon et Al, "The importance and Benefits of species" and Cagan H. Sekercioglu "Ecosystem functions and services" pg 63.
[60] Gascon et Al, "The importance and Benefits of species", current biology, 2015.
[61] Peter H. Raven and Jeffrey A. McNeelly "Biological Extinction: its scope and meaning for us" in Lakshman D. Guruswamy and Jeffrey A. McNeelly (eds.) "Protection of Global Biodiversity", Durham and London, 1998, pp. 24.
[62] World Animal Protection website. Last accessed: 15/09/2019.

Animals have also been fundamental in medical and scientific research in general, involving many species such as rats, mice, dogs, and even monkeys.

The pharmaceutical sector also relies on natural resources. The vast majority of all prescriptions in the United States "contain active ingredients extracted from plants and over 3000 antibiotics—including penicillin and tetracycline—are derived from microorganisms"[63]. Furthermore, in developing countries, traditional medicine is the predominant form of health care and its usage is growing in industrialized countries since the World Health Organization implemented a strategy to increase the consumption and regulation of traditional medicine[64].

In addition to food and medicine, tourism is another major rising industry that exploits biodiversity and nature to generate 12 billion dollars annually[65],and, in particular, wildlife tourism is increasing partly thanks to social media as reported by the National Geographic:

"Wildlife tourism isn't new, but social media is setting the industry ablaze, turning encounters with exotic animals into photo-driven bucket-list toppers. Activities once publicized mostly in guidebooks now are shared instantly with multitudes of people by selfie-taking backpackers, tour-bus travelers, and social media "influencers" through a tap on their phone screens. Nearly all millennials (23- to 38-year-olds) use social media while traveling. Their selfies—of swims with dolphins, encounters with tigers, rides on elephants, and more—are viral advertising for attractions that tout up-close experiences with animals."[66]

Giving biodiversity an economic value could lead to exploitation, enhancing consumption:

"A system of conservation based solely on economic self-interest is hopelessly lopsided. It tends to ignore, and thus eventually eliminate, many elements in the land that lack

[63] WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992.
[64] In May 2014, the Sixty-seventh World Health Assembly adopted resolution WHA67.18 on traditional medicine.
[65] WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992.
[66] Natasha Daly, "suffering unseen: the dark truth behind wildlife tourism", national geographic magazine, June 2019. Last access: 09/15/2019. Article available at the following link: https://www.nationalgeographic.com/magazine/2019/06/global-wildlife-tourism-social-media-causes-animal-suffering/.

commercial value but that are essential to its healthy functioning. It assumes that the economic parts of the biotic clock will function without the uneconomic parts"[67].

Thus, if preservation of biodiversity and animals is the goal, focusing mainly on economic interests will not lead to success because it will actually accelerate the exhaustion of resources and the alteration of ecosystem functioning. Biodiversity conservation should be expanded rather than maximizing profit from a single good[68]: "without such assessments, special interests representing single objectives dominate the debate and sideline the integration of ecosystem services into the decision-making process"[69].

2 Threats to species and biodiversity conservation

Having briefly examined the ethical, environmental and economic importance of biodiversity and animals, what threatens them the most?
With more than 28,000 species threatened with extinction at the present day[70], the Earth is facing its sixth mass extinction:

"The loss of biological diversity is one of the most severe human-caused global environmental problems. Hundreds of species and myriad populations are being driven to extinction every year. From the perspective of geological time, Earth's richest biota ever is already well into a sixth mass extinction episode."[71]

[67] Leopold (1949) in Peter H. Raven and Jeffrey A. McNeelly "Biological Extinction: its scope and meaning for us" in Lakshman D. Guruswamy and Jeffrey A. McNeelly (eds.) "Protection of Global Biodiversity", Durham and London, 1998, pp. 25.
[68] Cagan H. Sekercioglu "Ecosystem functions and services" in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 53 and WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992.
[69] Ibidem.
[70] IUCN 2019. The IUCN Red List of Threatened Species. Version 2019-2. http://www.iucnredlist.org.
[71] Gerardo Ceballos et Al, "Biological annihilation via the ongoing sixth mass extinction signaled by vertebrate population losses and declines", PNAS, 2017.

Extinctions are considered a normal phenomenon since environmental variance may lead to a change in conditions that can make it hard for species' individuals to survive and eventually the population will start to decline till extinction, but "If it changes more rapidly (the environment), […] the population will be poorly adapted most of the time. If it changes very rapidly, selection may be inadequate to restore adaptation quickly enough, and the population will dwindle and eventually become extinct"[72]. Normally, the current loss of species would have occurred over 10,000 years.

Mass extinctions occur when at least half of all species die out in a relatively short time[73] and our planet has previously undergone five mass extinctions, but the current event is different because it is driven by a single species – *Homo sapiens*. Extinction is irreversible[74], and species loss, as underscored above, inevitably leads to the deterioration of ecosystem complexity and services. In addition, the current true rate of species extinction is unknown for the simple reason that the total number of extant species is unknown. Therefore, the actual number of extinctions is undoubtedly much higher.

Extinctions today are driven by phenomenon like habitat destruction, global warming, overexploitation, pollution, and the spread of invasive species that outcompete native species. While these threats are occurring globally they can have their greatest impact on biodiversity hotspots, "pockets of nature that contain multitudinous species, including many rare and endangered species found nowhere else, that have also been threatened to a significant degree by human activities"[75]. These hotspots are to be found in Africa and south-east Asia for mammals, South America and Africa for birds, South America for amphibians and Australia for reptiles.

In particular, habitat destruction occurs when habitat is altered to the point that many of its inhabiting species can no longer sustain their populations. Globally, agriculture is the biggest cause of habitat destruction[76], which leads to deforestation. However, mining and clear-cut

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[72] Graham Bell and Sinead Collins, "Adaptation, extinction and Global change", Evolutionary application, 2008.

[73] American Museum of Natural History website, article available at https://www.amnh.org/exhibitions/dinosaurs-ancient-fossils/extinction/mass-extinction (last accessed: 23/11/2019).

[74] Stuart L. Pimm et Al., "extinctions and the practice of preventing them", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 181.

[75] Kunich J. C., "Ark of the broken covenant protecting the world's biodiversity hotspots", London, 2003, p. 18.

[76] William F. Laurance., "Habitat destruction: death by thousand cuts", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 73.

logging too can heavily damage habitats, subsequently leading to fragmentation, which occurs when there is a "breaking apart of continuous habitat, such as tropical forest or semi-arid shrubland, into distinct pieces"[77]. About this matter, a devastating example of habitat destruction is currently underway: in August 2019, the Amazon rainforest, home to 10% of Earth's animal species, was damaged by 9,000 wildfires set intentionally "to clear land for cattle ranching, farming, and logging"[78]. Human population growth increases demand for food and other products. In addition to smallholders, corporations supply these products by increasing large-scale agriculture, the "direct cause of tropical deforestation"[79], and resource extraction through logging, mining, transportation and petroleum development[80].

Global climate change, a product of human industrialization that emits greenhouse gases into the atmosphere, also causes biodiversity loss. Many species have adapted to the stable climate of the last 10,000 years, and thus are vulnerable to rapid change of climate[81]. To date, most of the human-created greenhouse gases have been absorbed by the oceans:

"*As temperatures rise, mass coral bleaching events and infectious disease outbreaks are becoming more frequent. Additionally, carbon dioxide absorbed into the ocean from the atmosphere has already begun to reduce calcification rates in reef-building and reef-associated organisms by altering seawater chemistry through decreases in pH. This process is called ocean acidification. Climate change will affect coral reef ecosystems, through sea level rise, changes to the frequency and intensity of tropical storms, and altered ocean circulation patterns. When combined, all of these impacts dramatically alter ecosystem function, as well as the goods and services coral reef ecosystems provide to people around the globe."*[82]

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[77] Andrew F. Bennet and Denis A. Saunders, "Habitat fragmentation and landscape change", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 88.

[78] Natasha Daly, "What the Amazon fires mean for wild animals", national geographic magazine, August 2019. Last access: 09/16/2019. Article available at the following link: https://www.nationalgeographic.com/animals/2019/08/how-the-amazon-rainforest-wildfires-will-affect-wild-animals/.

[79] William F. Laurance., "Habitat destruction: death by thousand cuts", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 73.

[80] Ibidem.

[81] Thomas E. Lovejoy, "Climate change", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 153.

[82] United States National Ocean Service's website.

Because of changing climate patterns, species must adapt to the new conditions (through phenotypic plasticity or genetic evolution) or modify the timing of reproduction (nesting, flowering, breeding)[83] or migrate to new habitat. Some species will adapt, but many will not, with serious consequences again for the functioning of ecosystems and the conservation of species themselves.

Overexploitation occurs when "the harvest rate of any given population exceeds its natural replacement rate, either through reproduction alone in closed populations or through both reproduction and immigration from other populations"[84]. In particular, biodiversity is exploited for industries like food, pet trade, medicines, fuel, cosmetics, logging, hunting and fishing. The direct harvest of organisms has had the largest impact on marine ecosystems[85]. To better understand the extent of the issue, in tropical forests, large vertebrates are seriously threatened by overhunting and "overexploitation, accidental mortality and persecution caused by humans threatens approximately one-fifth (19%) of all tropical forest vertebrate species for which the cause of decline has been documented"[86]. Furthermore, IUCN reported that overexploitation is the most important cause of freshwater turtle extinctions and the third-most important for freshwater fish extinctions, behind the effects of habitat loss and introduced species.

Related to overexploitation, it has been reported in a new international study published in the journal Science, that global trade in wildlife is far more extensive and more damaging to biodiversity than conservationists previously thought, constituting a key factor in species decline[87]. In particular, the study revealed that 5,579 species of mammals, birds, reptiles and amphibians (18%z of the total 31,745 land-based vertebrate species known to live on Earth) are traded on the world market either legally or illegally, figures that are 50% higher than previous estimates[88]. The project leader, David Edwards, affirmed that "wildlife trade

[83] Thomas E. Lovejoy, "Climate change", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 155.
[84] Carlos A. Peres, "overexploitation", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 107.
[85] Report of Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019.
[86] Carlos A. Peres, "overexploitation", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 107.
[87] Scheffers B., et Al., "Global wildlife trade across the tree of life", Science, vol 366, issue 6461, 2019.
[88] Ibidem.

"represents a major extinction threat to several thousand species of birds, mammals, amphibians and reptiles on a similar scale to changing land use, human encroachment and climate change"[89]. Furthermore, a consequence of the depletion of traded species is the exploitation of other species with similar characteristics, starting a vicious circle where other species can become endangered.

The introduction of invasive species to a habitat can lead to the depletion of native species. Invasive species are characterized as being more mobile, fast-growing, tolerant of a wide range of environmental conditions, and generalist in their feeding patterns – characteristics that enable them to outcompete or prey upon native species. In particular, invasive species can have particularly strong effect on islands. For example, in New Zealand there were almost no native species of mammals, but today there are thirty species that have been introduced in the territory and some of them are particularly detrimental to local fauna and flora, such a the Australian brushtail possum that now counts millions of individuals who destroy broadleaved native trees, eating bird eggs and chicks too[90].

All these threats together reduce genetic and species diversity, and the effects on ecosystem services are already visible, for example with recorded losses in the agricultural field such as in the United States in 1970, when farmers lost 1 billion dollars because of a disease that swept through uniformly susceptible corn varieties, or the even more popular Irish potato famine in 1846[91]. Another example is water scarcity, a fundamental and irreplaceable ecosystem service that some countries are starting to lack. An example is the recent drought experienced in India: in June 2019 nearly 65% of the country's reservoirs were running dry. This drought has been partially caused by low rainfall over the past few months compared to the seasonal precipitations. This kind of shortages, due to their importance for people survival and countries' economy, can be considered a national security issue: "because biodiversity is so closely intertwined with human needs, its conservation should rightfully be considered an element of national security. […] A secure nation means not only a strong nation, but also one with a healthy and educated populace, and a healthy and productive environment as well.

[89] "Global wildlife trade a key factor in species decline", Financial Times, 2019.
[90] Daniel Simberloff, "Invasive Species", in Navjot S., Ehrlich R. (eds.) "Conservation Biology for all", Oxford, 2010, pp. 132.
[91] WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992.

National security will be strongest in countries that care for their biodiversity and the services it provides."[92]

3 Biodiversity safeguard: the development of International Instruments and Organizations

Considering how biodiversity and animal species conservation is important and the threats they are facing, over the years the international community felt the need to act to establish international organizations and develop binding and non-binding instruments to protect biodiversity and animals. In this sub-chapter, it is highlighted the major steps in the development of international environmental law and demonstrate that, in some cases, biodiversity and animals protection has changed from a purely economic approach to ethical and environmental approaches protecting nature for its own value and fundamental role in sustaining life.

The first attempts to protect biodiversity through international law can be traced back to the colonial period, when European powers, Great Britain and Germany, became interested in protecting their commercial affairs, in particular protecting wildlife from hunting[93]. The first biodiversity agreement, the London Convention, or the Convention for the Preservation of wild animals, birds and fish in Africa, was adopted in 1900 to regulate hunting and trade of African fauna. When Europeans arrived in Africa, they destroyed the habitat and decimated much of the wildlife within a few decades, putting their commerce in jeopardy: "Ivory was the chief source of revenues for colonial governments, the foundation of colonial trade"[94]. By introducing hunting restrictions, protected areas, trade rules and designating lists of protected species the London Convention established "innovative concepts of conservation policy that have since become part of the fabric of biodiversity treaty law."[95]

[92] Ibidem.
[93] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.18.
[94] Adams R., "Elephant treaties: the colonial legacy of the biodiversity crisis", Hanover and London, 2004, pp 20.
[95] Ibidem.

Until the second World War, international treaties tended to be regional in scale, but with the establishment of the United Nations, biodiversity protection evolved rapidly between the 1940s and the 1970s: "the United Nations is the premier forum to initiate, discuss and create international law as there is no other international institution with a similar broad mandate"[96]. The United Nations Education, Scientific and Cultural Organization (hereafter UNESCO) was one of the first UN organizations created to protect the environment[97] with 193 states parties globally.

Another major development in biodiversity protection was the foundation in 1948 of the International Union for the Conservation of Nature and Natural Resources (hereafter IUCN) which was "the first successful international organization"[98]. The IUCN website claims that "The International Union for Conservation of Nature (IUCN) is a membership Union uniquely composed of both government and civil society organisations" and its members include 80 states, 115 government agencies, 93 international NGO's, 750 national NGOs and 29 affiliate members"[99]. Through its congresses, IUCN has established crucial agreements to protect species and biodiversity like the Convention on Biological Diversity (hereafter CBD), the Convention on International Trade in Endangered Species (hereafter CITES) and the UNESCO Convention. The IUCN also plays a key role in the assessment of species' conservation status through the Red List of Threatened Species which is "the world's most comprehensive information source on the conservation status of animal, fungi and plant species"[100].

The IUCN also created the 1946 International Convention for the Regulation of Whaling, which is still in force. It was adopted "to provide for the proper conservation of whale stocks and thus make possible the orderly development of whaling industry"[101], including a hunting quota system. Stocks did not recover, leading to a moratorium on whale hunting that is still

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[96] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.18.

[97] See www.unesco.org (last accessed: 19/09/2019).

[98] Cioc M., "the game of conservation, international treaties to protect the world's migratory animals", Ohio university press, 2009, pg 11.

[99] See https://www.iucn.org/about (last accessed: 19/09/2019) and Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.18.

[100] See https://www.iucn.org/theme/species/our-work/iucn-red-list-threatened-species (last accessed: 19/09/2019)

[101] See International Whaling Convention, preamble.

in place[102]. The Whaling Convention constitutes a good example of the adaptive approach that led an economic-driven instrument to be interpreted in a more conservation-centred way, signalling the raising awareness of the value of nature and biodiversity during this period. In 2014, the International Court of Justice's judgement on *Whaling in the Antarctic* was described as "the international community adopted a conservation-oriented approach […] it is not only about stock management, but about whale conservation, as they are seen as a common interest for the international community"[103].

During the 1970s environmental protection gained even more support. The 1972 UN Conference on the Human Environment resulted in the creation of the UN Environmental Program. "The United Nations Environment Programme (UN Environment) is the leading global environmental authority that sets the global environmental agenda, promotes the coherent implementation of the environmental dimension of sustainable development within the United Nations system, and serves as an authoritative advocate for the global environment."[104] This UN body is fully dedicated to environmental issues and works in partnership with other organizations, including IUCN, UNESCO and major non-profit organizations (NGO's) like the World Wide Fund for Nature (WWF). During the same decade, several new Conventions came into existence, including the following conventions described below: the UNESCO Convention for the Protection of the World Cultural and Natural Heritage (1972); the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES, 1973) and the Convention on the Conservation of Migratory Species of Wild Animals (1979).

An important moment in the development of international environmental law was the publication of the Brundtland Report, "Our common Future", in 1987 by the World Commission on Environment and Development[105]. According to the author, the report caused the UN General Assembly to plan for a UN Conference on Environment and Development

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[102] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.19.

[103] De Vido S., "La tutela dei cetacei nel diritto internazionale. Tra "diritti" dei mammiferi e principio di precauzione", in Gazzola M. And Turchetto M. (eds.) "Per gli animali è sempre Treblinka", Milano, 2016.

[104] See https://www.unenvironment.org/about-un-environment (last accessed (19/09/2019).

[105] See https://sustainabledevelopment.un.org/milestones/wced (last accessed on 19/09/2019) and Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.21.

(hereafter UNCED) which led to the Rio De Janeiro conference in 1992. Participation was high at the UNCED summit, including intergovernmental organizations and NGOs, and resulted in the adoption of three non-binding instruments, the opening for signatures of two binding treaties (including the Convention on Biological Diversity) and the initiative for the development of a third one. The UNCED focused "on striking the right balance between environmental protection and economic development as well as on devising an integrated approach to environmental management"[106]. The Convention on Biological diversity was the "first international treaty explicitly to address all aspects of biodiversity ranging from the conservation of biological diversity and sustainable use of biological resources to access to biotechnology and the safety of activities related to modified living organisms"[107], but it was also the last to include such a large variety of concepts.

In the following paragraphs, I describe the before mentioned most important biodiversity-related conventions that are relevant for the conservation of large mammals like the African Elephant, the case study of this dissertation, whose situation will be analysed in detail in chapter two and three.

[106] Ibidem.

[107] Bowman M. & Redgwell C., "International Law and the Conservation of Biological Diversity", London and Boston, 1996.

4 UNESCO'S Convention concerning the protection of the World Cultural and Natural Heritage

4.1 Introduction to the Convention

UNESCO launched campaigns to safeguard cultural sites that constitute the basis for the drafting of a Convention that protects cultural heritage and in 1965 the United States proposed to add the natural heritage to the Convention too. Thus, the IUCN developed the first proposal. As mentioned before, these proposals were presented during the 1972 UN conference in Stockholm and adopted in the same year by the General Conference of UNESCO, giving birth to the UNESCO Convention concerning the Protection of the World Cultural and Natural Heritage, also know as the World Heritage Convention.

As the name of the convention indicates, the main aim of the Convention is to preserve cultural and natural heritage of outstanding interest, and this Convention is relevant to the case study because it also aims at protecting endangered species and their habitat. In particular, article two of the Convention states that natural heritage includes:

"Natural features consisting of physical and biological formations or groups of such formations, which are of outstanding universal value from the aesthetic or scientific point of view; geological and physiographical formations and precisely delineated areas which constitute the habitat of threatened species of animals and plants of outstanding universal value from the point of view of science or conservation; natural sites or precisely delineated natural areas of outstanding universal value from the point of view of science, conservation or natural beauty"[108].

The Convention is a reminder of the need to preserve the balance between man and the environment[109].

[108] World Heritage Convention, article 2.
[109] Ed. Peter H. Sand, "the effectiveness of international environmental agreements, a survey of existing legal instruments", Cambridge, 1992.

The World Heritage Convention has almost a universal membership, with 193 member-states as of 2017.

4.2 Institutional Framework

About the Convention's institutional framework, the main bodies are the General Assembly of States Parties, the World Heritage Committee, The Bureau, and the World Heritage Centre as well as advisory bodies, of which the more interesting for this study, since it deals with the natural heritage, is the IUCN organization.

The General Assembly of States Parties is the main executive body of the Convention, is composed of all member states, it meets every two years and its more important duty is that of electing new members to the World Heritage Committee and determine the financial commitments of the States Parties.

The World Heritage committee is composed of 21 members elected by the General Assembly for six years and it meets annually to decide matters concerning the implementation of the convention[110]. The Committee's most important tasks are to decide on the inclusion of new sites in the World Heritage List, examining the conservation state of the site, and analysing the possible removal of sites from the list.

To assist the Committee in its tasks, it has been created a seven members body, the Bureau, which main task is that of coordinate the Committee's work, meeting as often as possible to prepare the Committee annual meeting.

In addition, like in the majority of the Conventions, the UNESCO Convention established a Secretariat, which in this case is called the World Heritage Centre: as it can be read on the organization's website, among the main World Heritage Centre functions, it is in charge of day-to-day management of the Convention, it organizes the annual sessions of the World Heritage Committee and its Bureau, provides advice to States Parties in the preparation of site nomination, organize the periodic reporting exercise, coordinate the reactive monitoring

[110] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.168.

process, organizes technical seminars and workshops and promotes the Convention through the dissemination of information to states parties and the general public.[111]

Finally, the Convention has three advisory bodies, among which there is the IUCN organization, which main functions are to advise on the implementation of the World Heritage Convention, to monitor the state of conservation of World Heritage sites and review requests for international assistance, to evaluate sites nominated for inscription on the World Heritage List and present evaluation reports to the Committee.

4.3 Implementation

As far as implementation is concerned, in the UNESCO website it can be read that the World Heritage Committee developed the Operational Guidelines for the Implementation of the World Heritage Convention, which constitutes a precise set of criteria for the inscription of properties on the World Heritage List and to receive assistance from the World Heritage Fund[112]. According to the Guidelines, that are regularly updated, the first step to apply the Convention is the preparation of a tentative list, which is "an inventory of those properties situated on its territory which each State Party considers suitable for nomination to the World Heritage List"[113]. The tentative list should be prepared in collaboration with the highest number of stakeholders such as site managers, local and regional governments, local communities, indigenous peoples and NGOs[114]. The tentative list must be submitted to the Secretariat at least one year prior to the submission of any nomination[115]. As reported in the guidelines, the tentative list should include sites that actually have potential Outstanding Universal Value, and in particular for natural sites to establish that States Parties are

[111] See UNESCO website accessible at https://whc.unesco.org/en/world-heritage-centre/ (last accessed: 14/10/2019) and Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.168.
[112] World Heritage Convention website accessible at https://whc.unesco.org/en/guidelines/ (last accessed: 26/11/2019).
[113] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019).
[114] Ibidem.
[115] Ibidem.

encouraged to consult the analysis of the IUCN that identify the gaps in the World Heritage List[116].

As reported in the organization's website, at the present time, 184 State Parties out of 193 have submitted their tentative list[117]. Following the submission of the Tentative list, State Parties can proceed with the nomination of a property for inscription on the World Heritage List. As reported in the Guidelines, nominations to the World Heritage List must always be included in the tentative list, otherwise they will not be considered. States Parties are required to fill out a detailed document which should include the identification of the property, description of the property, justification for inscription, state of conservation and factors affecting the property, protection and management, monitoring, documentation, contact information of responsible authorities, signature on behalf of the States Parties[118].

Since IUCN is the advisory body for the natural sites, it is the body in charge of evaluating the States Parties' nominations through a set of criteria, which are inserted in the Operational Guidelines[119]. Afterwards, the Committee considers the nomination and takes the final decision whether to include the site in the World Heritage List or refuse the nomination or whether to inscribe it in the List of World Heritage in Danger. The decision by the Committee to inscribe a site in the World Heritage List is always justified through the Statement of Outstanding Value, that states the criteria through which the property has been inscribed and what should be done to preserve and manage it in the future[120].

Considering the way the Convention is structured and the enlisting process, once a site is inscribed in the World Heritage List it can be said that implementation has been largely achieved[121]. In particular, as laid down in the operational guidelines, "legislative and regulatory measures at national and local levels should assure the protection of the property

[116] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019) and Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.182.
[117] See https://whc.unesco.org/en/tentativelists/state=tz – last accessed 26/11/2019.
[118] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019).
[119] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019), paraghraph IID of chapter II.
[120] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.184.
[121] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.181.

from social, economic and other pressures that might negatively impact the Outstanding Universal Value"[122]. In addition, States Parties are required to assure the full and effective implementation of such measures[123].

As far as monitoring is concerned, every six years States Parties are required to submit to the World Heritage Committee a Periodic Report on the application of the World Heritage Convention in their territory[124]. Among the purposes of these reports is that of providing up-to-date information about the World Heritage Properties to record the changing circumstances and state of conservation of the properties[125]. Moreover, besides the individual reports, States Parties from a sub-region, are requested to prepare reports and action plans concerning their region[126].

In addition to this reporting mechanism requested by the Convention itself[127], IUCN developed its own monitoring system: the IUCN World Heritage Outlook. As it can be read on the IUCN website:

"The IUCN World Heritage Outlook is the first global assessment of natural World Heritage […] Launched in 2014 and with a second report released at the Bonn UN climate change conference in November 2017, it is the first global assessment of natural World Heritage and the first to recognise conservation success in the world's most iconic places. Up to the IUCN Outlook, only about half of the listed sites have been regularly monitored through the UNESCO World Heritage Convention."[128]

Given the lack of monitoring through the UNESCO World Heritage Convention, through this project the IUCN aim is to assess all natural World Heritage sites[129].

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[122] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019), chapter II, paragraph 98.
[123] Ibidem.
[124] See https://whc.unesco.org/en/periodicreporting/ - last accessed 27/11/2019.
[125] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019), chapter V, paragraph 201.
[126] Ibidem, chapter V, paragraph 203.
[127] See article 29 of the Convention.
[128] See https://www.iucn.org/theme/world-heritage/our-work/iucn-world-heritage-outlook - last accessed 27/11/2019.
[129] Ibidem.

An essential element for the Convention application is funding. As it can be read on article 15, the Convention established the creation of a fund, called the World Heritage Fund. The resources of the fund consist mainly of compulsory and voluntary contributions of the States Parties but also contributions, gifts or bequests made by other States, UNESCO and other UN organisations, public or private bodies or individuals, any interest due to the resources of the Fund, funds raised by collections and receipts from events organized for the benefit of the fund and all the resources authorized by the Fund's regulations, as drawn up by the World Heritage Committee[130].

It is the World Heritage Committee that decides which programs and projects will be financed by the Fund, however the Fund contributions can be used, for example, to carry out "studies concerning the artistic, scientific and technical problems raised by the protection, conservation, presentation and rehabilitation of the cultural and natural heritage; supply of equipment which the State concerned does not possess or is not in a position to acquire"[131].

However, the Convention receives funding also from extra-budgetary funds and directly from UNESCO's regular budget for the protection of the World Heritage sites[132]. Among the extra-budgetary funds, one of the most important is the United Nations Foundation, which has contributed to World Heritage biodiversity projects that benefited 48 natural World Heritage sites and 26 States Parties (among which the Democratic Republic of Congo)[133].

Since this study focuses on African countries, it is important to mention the African World Heritage Fund, launched in 2006 "to address the challenges faced by the African State Parties in the implementation of the 1972 Convention concerning the protection of the World Cultural and Natural Heritage, specifically, the underrepresentation of African sites on the World Heritage List and the insufficient conservation and management of these sites"[134].

In addition to the previously mentioned funding resources, as reported in the Operational Guidelines, "the Convention provides also international assistance to States Parties for the protection of the world cultural and natural heritage located on their territories and inscribed

[130] See also https://whc.unesco.org/en/financialregulations/ - last accessed 29/11/2019.
[131] See also https://whc.unesco.org/en/financialregulations/ - last accessed 29/11/2019.
[132] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.194.
[133] Ibidem.
[134] See https://awhf.net/about-us/ - last accessed 29/11/2019.

or potentially suitable for inscription on the Wolrd Heritage List"[135]. The international assistance can be of different types which are emergency assistance, preparatory assistance and conservartion and management assistance[136].

4.4 Effectiveness in protecting natural sites and species

Considering the Convention's structure, mechanisms and funding, is it actually effective in protecting natural sites and the species that inhabit them?

To answer to this question, I have relied on the work of Karin Baakman[137] as well as on a considerable research carried out through the analysis of the latest available Report concerning the Second Cycle of Periodic Reporting in Africa[138] and the latest available IUCN report assessing all Natural World Heritage sites[139].

Through the analysis of these resources, it can be affirmed that the Convention implementation is generally unsatisfactory[140].

The reasons are various: one is that many natural and mixed sites had not yet been nominated[141]. IUCN identified the natural sites that should be included in the States Parties' tentative lists to be inscribed in the World Heritage List, but States Parties do not always follow the IUCN studies and reports[142]. In addition, as previously explained in this paragraph, the Committee decides which sites to include in the World Heritage List, however the Committee too does not always follow the IUCN's recommendations. This is because of the

[135] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019), chapter VIIC, paragraph 233.
[136] Ibidem.
[137] Karin Baakman is PhD student at Tilburg University- her dissertation focused on the effectiveness of five international biodiversity-related conventions, among which the World Heritage Convention. Her assessment data refer to the year 2011 and before.
[138] The data to produce the Report about the third Cycle of Periodic Reporting in Africa will be analyzed by the Committee in 2020, as it can be seen at the following link: https://whc.unesco.org/en/periodicreporting/.
[139] IUCN World Heritage Outlook 2, available at the following link: https://www.iucn.org/theme/world-heritage.
[140] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011.
[141] Ibidem, p.199.
[142] Ibidem, p. 182.

political dimension of the process, and States Parties with pending nominations can exercise pressure on it[143].

Furthermore, as stated before, the sites inserted in the World Heritage List should be protected by national laws, but there was little information made available by the World Heritage Center about the quality of this legislation and its enforcement[144].

To discuss this issue, since this study focuses on Africa, it might be interesting to take the African continent as an example. Looking at the report that presents the results of the Second Cycle of the Periodic Reporting in the Africa region published in 2011, it is stated that in this region a legal framework protecting the sites was present, however States Parties' policies "are often inadequate and/or outdated, and the States Parties report limited capacities for implementation and enforcement"[145]. In addition to national laws, it is stated in the report that States Parties in this region have ratified also other international conventions concerning conservation of natural sites and biodiversity such as the Convention on International Trade on Endangered Species of wild Fauna and Flora (CITES), the 1979 Bonn Convention on Migratory Species, and the 1992 Rio Convention on Biological Diversity. Despite the potential offered through the integrated implementation of these conventions and further integration of them into national policies, the "majority of States Parties (59%) report that there is limited coordination and integration of these conventions into the development of national policies for conservation, protection and presentation of cultural and natural heritage"[146].

Another issue concerning the conservation of World Heritage Natural sites is the development on or near the sites[147]. For example, a bridge was built over the river Elbe in the Dresden's Elbe Valley which is a World Heritage site, which inevitably caused the site to be deleted from the World Heritage List[148]. The issue is also mentioned in the 2011 report about the Second Cycle of the Periodic Reporting in the Africa region: "Certain natural properties

[143] Ibidem, p. 183.
[144] Ibidem, p.199.
[145] Report Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.
[146] Ibidem.
[147] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p. 199.
[148] Ibidem, p.200.

are reporting current and potential negative impacts from major visitation accommodation and associated infrastructure and housing. […] the reason for this might be found in limited cooperation with local communities and industries and lack of tourism planning and management"[149].

The last sentence in the above quotation highlights another issue concerning the conservation of the UNESCO sites, which is the involvement of local communities, indigenous people and the private sector. In the report it can be read that "The level of participation of local communities, indigenous peoples, landowners and the private sector in the implementation of the Convention varies in the region, but is generally limited"[150]. An example of this issue is the Endorois population case in Kenya: as reported in the Centre for Minority Rights Development and Minority Rights Group International[151] website, in 1970s the Kenyan government ordered the expulsion of hundreds of Endorois families from the Lake Bogoria area, their land, to create a game reserve for tourism. Even though they were promised compensations and benefits, these were never fully implemented and Endorois access to the land was restricted[152]. Their situation worsened when in 2011 the UNESCO inserted Lake Bogoria in the World Heritage List, a decision that affects Endorois' rights to the land[153]. In May 2014, the representatives of the Kenyan Commission to UNESCO and the Endorois Walfare Council signed a memorandum of understanding that recognized Lake Bogoria as Endorois ancestral land and required Endorois inclusion in management of the land. The World Heritage Committee subsequently issued a State of Conservation report in July 2014 urging the Kenyan government to include the Endorois in management and benefit-sharing[154].

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[149] Report Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.

[150] Ibidem.

[151] The International Network for Economic, Social and Cultural Rights "is a collaborative initiative of groups and individuals from around the world working to secure economic and social justice through human rights. ESCR-Net seeks to strengthen the field of all human rights, with a special focus on economic, social and cultural rights, and further develop the tools for achieving their promotion, protection and fulfillment". See also the organization's website accessible at: https://www.escr-net.org/about-us/mission-and-governance – last accessed 1/12/2019.

[152] See https://www.escr-net.org/caselaw/2010/centre-minority-rights-development-kenya-and-minority-rights-group-international-behalf – last accessed 1/12/2019.

[153] See https://minorityrights.org/2014/09/23/the-endorois-decision-four-years-on-the-endorois-still-await-action-by-the-government-of-kenya/ - last accessed 1/12/2019.

[154] See http://whc.unesco.org/en/soc/2895in%20 – last accessed 1/12/2019.

Another fundamental element in the Convention application is appropriate funding. In general terms, the funding options offered to States Parties are meaningful[155], however not all regions receive enough to successfully protect their sites: focusing again on the African region, in the report it is stated that financial resources for the conservation and protection of the World Heritage are provided mainly by national government funds[156]. The previously mentioned African World Heritage Fund proved important in providing African States Parties financial assistance for the Convention implementation, however funding remains a challenge for effective conservation and protection of World Heritage properties in the region[157] and call the African World Heritage Fund to provide with resources to deal with this issue in the future[158]. These data are confirmed in the 2017 IUCN report assessing the conservation status of all the Natural Heritage sites, where it is stated that "when comparing how different management aspects have been assessed in 2014 and 2017, sustainable finance remains the topic of highest concern, with the highest number of sites in which it is assessed as being of some or serious concern"[159].

To conclude this excursus about the World Heritage Convention, the IUCN report states that "overall, effectiveness of protection and management has decreased between 2014 and 2017. From the 228 sites inscribed on the World Heritage List up to 2014, more sites natural are assessed as having concern overall with protection and management, and fewer sites are assessed as having overall effective or highly effective protection and management"[160]. The report continues affirming that a relevant issue in management effectiveness is the integration into regional and national planning systems where in 2017 a 40% increase was recorded of sites that were assessed as being of some or serious concern in 2017 compared to 2014[161]. This particular issue will be discussed more in detail in the third chapter of this study analysing the national application of the Convention in four African range States.

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[155] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p. 198.
[156] Report Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.
[157] Ibidem.
[158] Ibidem.
[159] IUCN World Heritage Outlook 2 – A conservation assessment of all natural World Heritage sites, 2017 available at: https://www.iucn.org/theme/world-heritage.
[160] Ibidem.
[161] Ibidem.

5 CITES: the Convention on International Trade in Endangered Species of wild fauna and flora

5.1 Introduction to the Convention

The Convention on International Trade in Endangered Species of Wild Fauna and Flora was signed in Washington, DC in 1973 and entered into force in July 1975.

The Convention's aim is that of regulating trade of wild animal and plant species to reduce threats to their survival and to ensure their preservation. The need for a Convention on trade derives from the fact that billions of dollars of plants and animals are sold every year and since the level of exploitation in some species is still high, this fact coupled with other factors such as habitat loss, fosters the need to regulate trade of these species to ensure their survival: "Many wildlife species in trade are not endangered, but the existence of an agreement to ensure the sustainability of the trade is important in order to safeguard these resources for the future"[162].

CITES currently protects 35,000 species of animals and plants and the trade includes live animals and plants such as primates, birds, reptiles, fish as well as the derivative products including food, ivory products, mammal furs, reptile skins, corals, timber, medicines and clothes. As for the World Heritage Convention, CITES has a high level of membership with 183 'parties', including regional economic organizations like the European Union which joined in 2015[163], making this Convention almost universal in its application.

Importantly, CITES established three Appendices that define the protected status of the different species. Appendix I lists species threatened with extinction for which trade is permitted only under exceptional circumstances. Appendix II includes species that are not immediately threatened with extinction, but for which trade must be controlled to ensure their survival. Appendix III includes species that are protected in at least one country and is listed by that country to avoid trade.

[162] See https://www.cites.org/eng/disc/what.php - last accessed: 23/09/2019

[163] See https://www.cites.org/eng/disc/parties/chronolo.php for the Parties' lists – last accessed 24/09/2019

To list a species in one Appendix or the other, there are specific criteria: at the beginning the Bern Criteria were the first criteria to regulate the listing of species in Appendix I and II, but these criteria were perceived as too rigid. Therefore, they were revised during the years and the actual set of criteria have been adopted in 1994 through the resolution Conf. 9.24 (Rev. CoP17) and they are called Fort Lauderdale criteria.[164] It is important to mention this change because these latest criteria are more focused on ecology[165] and they are at the core of the Convention functioning, considering that from their correct application derives the success or not of the Convention. In addition, the listing of Appendix III species is governed by resolution Conf. 9.25 (Rev. CoP14). Lastly, articles III, IV and V describe how trade in species works according to the Appendix on which they are listed[166].

5.2 Institutional Framework

About the Convention's institutional framework, CITES is governed by a Conference of the Parties (member-states) and implemented by a Secretariat, a Standing Committee, the Animal and Plant Committees and within the governments of member-states, a Scientific and Management Authority.

The Conference of the Parties (COP) is the decision-making body of the Convention and generally convenes every two years to discuss the implementation of the convention[167]. The COP can adopt amendments to Appendices I and II as well as amendments to the Convention in general and recommend action to improve the effectiveness of the Convention[168].

An executive body, the Secretariat, among its main functions, organizes meetings and provides information to the Parties, coordinates the procedure to amend the appendices, carries out technical and scientific studies and checks the Parties' annual reports. The

[164] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.235.
[165] Ibidem.
[166] CITES Convention Text available at https://www.cites.org/eng/disc/text.php - last accessed 2/12/2019.
[167] Ibidem, p.224.

[168] See article XI of CITES.

Secretariat also prepares and presents an annual report to the Parties on its activities and on the status of the implementation of the Convention[169].

The CITES Standing Committee assists the Secretariat in the implementation of the Convention and in the supervision of the budget. It also coordinates the work of the Animal and Plants Committees, which are composed by experts whose duty is that of providing technical support to the decision-making bodies about species: in particular they provide scientific advice and guidance to the Conference of the Parties, the other committees, working groups and the Secretariat, deal with nomenclatural issues, undertake periodic reviews of species, in order to ensure appropriate categorization in the CITES Appendices, advise when certain species are subject to unsustainable trade and recommending remedial action (through a process known as the 'Review of Significant Trade') and draft resolutions on animal and plant matters for consideration by the Conference of the Parties[170]. The Standing Committee invites the other Parties to suspend their trade in CITES species with the non-compliant parties.[171]

5.3 Implementation

For the effective implementation of CITES, parties are expected to adopt CITES provisions into national law, such as designating at least one Management Authority and one Scientific Authority, prohibit trade in specimens in violation of the Convention, penalize such trade or confiscate specimens illegally traded or possessed[172]. In particular, the Management Authority is a national body designated by the government[173] that has two main roles: granting permits and certificates following the Convention's rules and communicating with the CITES secretariat and other Parties. On the other hand, the Scientific Authority could be

[169] See article XII of CITES

[170] See https://www.cites.org/eng/disc/ac_pc.php (last accessed: 15/10/2019)

[171] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.225

[172] Ibidem, p. 242

[173] It varies from country to country – to view the full list visit https://www.cites.org/eng/cms/index.php/component/cp (last accessed: 16/10/2019)

a government agency, a scientific institution, a committee or individuals, and its main task is that of advising the Management Authority whether the export of specimens would be detrimental to the survival of the species in the wild as well as on other scientific matters.

The functioning of the Convention is based on the latest data information about the status of the protected species and the monitoring of both the legal and illegal trade in the specimens of these species[174]. As said before, these tasks require the designation of a Scientific Authority who, in accordance with article III and IV of the Convention, advises the governments as to whether the import or export of a species is detrimental to their survival in the wild.

Another very important component that contributes to the Convention functioning is the submission by Parties to the Secretariat of annual reports: each Party is required to submit an annual report with detailed information about its CITES trade such as the names and addresses of exporters and importers, the number and type of permits and certificates granted, the states with which the trade occurred, the numbers or quantities and types of specimens, the names of species as included in the appendices and eventually, when possible, the size and sex of the specimens in question[175]. Regulations of trade in specimens in Appendix I, II and III are reported respectively in article III, IV and V of the Convention[176].

A fundamental component for the Convention implementation is funding. As it can be read on the Convention's website, the administrative costs of the Convention's bodies are covered by the CITES Trust Fund[177]. States Parties are required to contribute to the Fund following the United Nations scale of Assessment. The Convention relies also on external funding, such as special contributions from State Parties as well as governmental and non-governmental organizations: for example, the European Union funded various activities to strengthen the CITES implementation in developing countries[178].

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[174] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.248.

[175] Ibidem, see also https://www.cites.org/eng/imp/reporting_requirements/annual_report - last accessed: 16/10/2019.

[176] CITES text, available at https://www.cites.org/eng/disc/text.php.

[177] See https://www.cites.org/eng/disc/fund.php - last accessed 2/12/2019.

[178] Ibidem.

5.4 Effectiveness in protecting species from trade

As for the UNESCO Convention, it is important to address in this part a fundamental question: how effective is CITES in protecting species in general terms?

To reply to this answer I relied again on the work of Karin Baakman as well as on the book edited by Jon Hutton and Barnabas Dickson *Endangered species, threatened convention: the past, present and future of CITES, the Convention on Internarional Trade in Endangered Species of Wild Fauna and Flora* and further information provided by IUCN reports and other relevant and recent studies.

Through the analysis of these resources, it can be affirmed that even if the Convention's rules are good in principle, its effectiveness is generally unsatisfactory for various reasons.

A major shortcoming is the fact that most Parties accord a very low priority to the fight against illegal trade in wildlife since countries have higher profits from the trafficking of wildlife species[179].

Furthermore, it has been reported that in various countries enforcement resources (human, technological, logistical assistance) are absent[180]. Even in the United States the enforcement mechanisms are lacking, creating a situation where criminals are somehow incentivized to continue the illegal trade because of the perspective of high profits and low risks of being caught[181]. In addition, due to lack of resources and corruption, rangers are more prone to accept money from poachers or even accept a false certificate[182]. This latest issue is even fostered due to the fact that, for example, in African countries different languages are spoken, therefore there is the possibility that a ranger from Tanzania that receives a certificate issued by the official Management Authority of the Democratic Republic of Congo written in French may face issues understanding the truthfulness of the document.

The lack of law enforcement and the rule of law increases as well the interest of criminal organizations to the point that even the United Nations Security Council dealt with wildlife

[179] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.259.
[180] Ibidem.
[181] Ibidem.
[182] Ibidem.

poaching and trafficking, perceiving it as a threat to peace[183]: in 2014 the UN Security Council adopted two resolutions on the Central African Republic (res. 2134) and on the Democratic Republic of Congo (res. 2136), authorizing sanctions against poachers and wildlife product traffickers.

Another major shortcoming in the application of CITES is the lack of cooperation between Parties as well as among CITES authorities, enforcement agencies and NGOs[184]. In particular, about the involvement of NGOs, CITES is considered to be rather unwelcoming. For example, the Convention distinguishes between national and international organizations, with the former that are required to get an approval from the State in whose territory they are based. In addition, to participate as observers to meetings of the CITES bodies, each organization have to pay a fee and no financial assistance is available[185].

Very importantly among CITES member States there is a majority of Parties that did not implement sufficient legislation to meet the most important CITES requirements[186]: as explained before, CITES requires each member State to apply the Convention's norms through national laws, and in particular the minimum requirements are that member States have to designate at least one Management Authority and one Scientific Authority, prohibit trade in specimens in violation of the Convention, penalize such trade or confiscate specimens illegally traded or possessed[187]. This is called the National Legislation Project and under this project the Secretariat, after analyzing the national legislation of a member State and place it in one of the three categories established by the project. In particular, in category one the Secretariat inserts countries with legislation that is believed to generally meet the requirements for implementation of the Convention; in category two the Secretariat inserts countries with legislation that generally do not meet all the requirements for the implementation of CITES; finally, in category three are to be found countries with a

183 Peters A., "Novel practice of the Security Council: Wildlife poaching and trafficking as a threat to peace", EJIL talk, 2014.

184 Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.259.

185 Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.229.

186 Ibidem.

187 See https://cites.org/legislation/National_Legislation_Project - last accessed 16/12/2019.

legislation that does not meet the minimum requirements[188]. After consulting the latest legislative status table reporting data from November 2019 it emerged that the majority of member States fall in either category two or three, therefore these countries can not fully comply with the Convention which as a consequence undermines the Convention's effectiveness.

Going back to the origins of the Convention, the core problem is that the objective is not precisely stated. The only trace of an objective can be found in the Preamble where it is stated that "international cooperation is essential for the protection of certain species of wild flora and fauna against over-exploitation through international trade"[189], implying that trade should not be detrimental to the survival of the species. However, the listing of species in the appendices is not entirely based on biological criteria, but also on trade criteria: in the CITES Strategic Vision the focus is on the sustainable exploitation of CITES species. This could be controversial, since to properly conserve a species, it is not enough to assure the survival of it but actually to provide assistance for its recovery until it is not endangered anymore. And how can assistance to recovery be provided when a big factor considered is trade? For example, the Convention does not afford protection to the animals during capture and the beginning of transportation, with the consequence that without proper regulation many live animals die either before and after being transported to destination.

In addition to that, CITES takes into consideration only international trade, without taking into consideration other factors that influence species conservation. This gap would be solved through collaboration with other biodiversity-related Conventions that focus on other aspects of conservation such as the ones taken into consideration in this study. To this purpose, the Liason Group has been created with the aim to collaborate on the implementation of the Conventions. Notwithstanding its importance, for CITES Secretariat it does not seem a priority to participate in the afore mentioned group[190] therefore there is no real cooperation.

Another problematic aspect that affects the Convention's implementation is the monitoring procedure. As explained in the implementation paragraph, every member State is expected

[188] Ibidem.

[189] Convention on International Trade in Endangered Species of wild flora and fauna (CITES), Preamble.

[190] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.231.

to submit annually a detailed report concerning the traded species, however it has been found that the information included in these reports are not reliable[191]: the IUCN revealed in a 2000 report that only a small percentage of transactions show perfect correlation between the Annual Reports of exporting and importing countries[192]. The information contained in these reports are fundamental to take informed decisions about how to manage species, but the fact that they are not reliable can compromise the actual effectiveness of the Convention, leading to biased decisions. Reliable information is at the hearth of informed conservation policies.
In addition, these reports do not include information about the illegal trade in wild species, which for some of them it is even greater than the legal one[193]. However, the monitoring of the illegal trade is carried out by the Trade Record Analysis of Fauna and Flora in Commerce (TRAFFIC). This organization has been created in 1976 by the IUCN in coolaboration with WWF to act as a wildlife trade monitoring network[194], providing the accurate information needed to inform policy makers. In fact, one of the main reasons why TRAFFIC has been created is to collaborate closely with CITES Management Authorities to enhance implementation of the Convention regulations, to the point where CITES even mandated TRAFFIC to monitor specific wildlife trades: for example, since it is relevant to the case study of this dissertation, it is important to mention the Elephant Trade and Information System (ETIS), which is "the CITES-mandated tool that tracks illegal trade in elephant ivory and other elephant products."[195] The reason why ETIS has been established is to define trends in illegal elephant product trade and monitor the changes of these trends to subsequently determine whether they are related to CITES decisions for elephant conservation[196]. In addition to ETIS, there is also another monitoring programme controls, which is Monitoring Illegal Killing of Elephants (MIKE): as the name suggests, its aim is tracking the illegal killing of elephants in the wild through a site-based system and at the same time increase

[191] Ibidem, p.251.
[192] IUCN report Trade Measures in Multilatral Environmental Agreements.
[193] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, p.251.
[194] See TRAFFIC website at https://www.traffic.org/what-we-do/projects-and-approaches/trade-monitoring/ - last accessed 18/12/2019.
[195] See https://www.traffic.org/what-we-do/projects-and-approaches/trade-monitoring/elephant-trade-information-system/ - last accessed 18/12/2019.
[196] Ibidem.

management capacity[197]. The information provided by MIKE are also useful to range States[198] in order to make scientifically informed management and enforcement decisions[199]. However, member States do not take into consideration the reviews from IUCN and TRAFFIC on topics such as listing proposals[200], which are driven more by political reasons than conservation ones. In fact, as reported in a study published in the journal Science, it has been found that in nearly two-thirds of the cases the species that are signaled by IUCN as in need of protection are not actually protected under CITES, highlighting how the scientific knowledge does not really influence policy decisions, increasing the risk of species extinctions[201].

Even more problematic are sanctions: if a member State violates the convention, CITES can decide to prevent him to trade in CITES-listed species[202]. However, this rarely happens, preferring to opt for an inclusive approach. In addition, as it happens for all the treaties, States ratify them voluntarily and therefore they are free to leave whenever they want.

Another factor that can influence the actual effectiveness of the Convention is the voting system, that is structured in way that no range States of a particular species can actually take decisions about it with financial consequences for those States that have to manage it in their territory. This way the risk is that range States will have to adapt to a conservationist agenda that is not suitable for their financial and structural means, a situation that is diametrically opposed to collaboration[203].

Is CITES existence therefore useful? Looking at the situation with commercial timber and fisheries trades (that are not controlled by CITES), with species collapsing[204], it appears clear that an institutional framework and specific rules proved to be useful, however there is still

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[197] See https://cites.org/eng/prog/mike/index.php - last accessed 24/12/2019.

[198] According to the UN platform InforMEA, "A range state in relation to a particular migratory species means any State (and where appropriate any other Party referred to under sub-paragraph (k) of this paragraph) that exercises jurisdiction over any part of the range of that migratory species, or a State, flag vessels of which are engaged outside national jurisdictional limits in taking that migratory species. (Source: CMS, Art 1h).

[199] https://cites.org/eng/prog/mike/index.php.

[200] Hutton, J., "Endangered Species, Threatened Convention: The Past, Present and Future of CITES, The Convention on International Trade in Endangered Species of Wild Fauna and Flora", London, Earthscan, 2000.

[201] Frank G. E. et Al, "Long delays in banning trade in threatened species", Science, Vol 363, 2019.

[202] "What is the Convention on International Trade in Endangered Species?", National Geographic, 3/07/2019.

[203] Hutton, J., "Endangered Species, Threatened Convention: The Past, Present and Future of CITES, The Convention on International Trade in Endangered Species of Wild Fauna and Flora", London, Earthscan, 2000.

[204] IUCN report, Trade Measures in Multilateral Environmental Agreements, 2000.

a conspicuous amount of work to be done to improve its effectiveness. This aspect will be analyzed more in depth in the third chapter of this study.

6 CMS: the Convention on the Conservation of Migratory Species of Wild Animals

6.1 Introduction to the Convention

The Convention on Migratory Species and Wild Animals (CMS) was adopted in 1979 and came into force on November 1983:

"CMS provides a global platform for the conservation and sustainable use of migratory animals and their habitats. CMS brings together the States through which migratory animals pass, the Range States, and lays the legal foundation for internationally coordinated conservation measures throughout a migratory range"[205]

The Convention defines migratory species as "the entire population or any geographically separate part of the population of any species or lower taxon of wild animals, a significant proportion of whose members cyclically and predictably cross one or more national jurisdictional boundaries"[206]. This Convention is relevant to this study given Elpehants are a migratory species.

CMS is the only global Convention specializing in the conservation of migratory species[207], aimed at protecting the 8000 to 10000 species that migrate every year from country to country, and for this reason are exposed to higher risks. The Convention has broad impacts because it covers migratory species from land, sea and air.

Like CITES and the World Heritage Convention (UNESCO), CMS counts a high number of Parties, 129 at present, even though some leading countries like the United States, Canada, Russia, China and Japan have not ratified the Convention[208], rendering protection incomplete.

[205] See https://www.cms.int/en/legalinstrument/cms - last accessed 24/09/2019.
[206] CMS convention, article 1a.
[207] See https://www.cms.int/en/legalinstrument/cms - last accessed 24/09/2019.
[208] Several countries although not Party to the Convention are Party to one or more of the Agreements and/or have signed one or more of the MOUs, like the United States.

Similarly to CITES, CMS categorizes species according to how endangered they are, dividing them in two Appendices, that are described in article III and IV of the Convention: Appensix I and II. In Appendix I are inserted the species that are threatened with extinction. In Appendix II are inserted all the species that to be protected need cooperation, cooperation that should lead to the conclusion of regional agreements between range States[209]. These Agreements can be both binding instruments and Memoranda of Understanding, which are less formal instruments. For this reason, the CMS can be considered a framework Convention: article V of the Convention text describes the guidelines to design these agreements, which are accessible also to non-member States.

Given that this study focuses on the conservation of African Elephants as a case study, it is important to highlight that in 2005 a Memoranda of Understanding has been signed to enhance the conservation of the West African populations of the African Elephant. It has been signed by 13 range States, of which 12 are a CMS Party[210]. This document has been developed because African Elphants are both inserted in Appendix II and CMS is the only Convention among the ones analyzed in this study that recognizes the difference between Savanna and Forest Elephants, an important differenciation that would enhance conservation of the species and that will be described in depth in the second chapter of this work.

6.2 Institutional Framework

CMS is governed by a Conference of the Parties (COP), which is the decision-making organ and it convenes at intervals of no more than three years. Among its most important tasks, at every meeting it reviews the implementation of the Convention assessing the status of migratory species, reviewing the progress in species conservation, with a particular attention to those listed in Appendix I and II. In addition, this organ decides the Convention budget and keeps under review the financial regulations of it[211].

[209] See https://www.cms.int/en/legalinstrument/cms - last accessed: 28/12/2019.
[210] See http://www.cms.int/west-african-elephants – last accessed: 28/12/2019.
[211] CMS Convention, art VII.

Through Resolution 1.1 of the COP the Standing Committee was established, and its main tasks are making sure that decisions taken at the COP are implemented, it assists the COP in the budget monitoring and advices the Convention's Secretariat. It meets before and after the COP as well as once a year among sessions[212].

CMS also has a Scientific Council, which tasks are described in article VIII of the Convention. It is formed by experts appointed by any Party parties and by the COP and it mainly provides advises on scientific matters.

The "Convention operates under the auspices of UNEP, which provides administrative support to the Convention by running the Bonn-based Secretariat"[213]. The Secretariat instead has some key tasks such as the development and promotion of agreements between Parties, stimulation and support of research, obtains reports and other information to further the objectives and implementation of the Convention and maintains and publish a list of Range States of all migratory species listed in Appendices I and II.

6.3 Implementation

For the correct implementation of the Convention, as stated in the previous paragraph, range States are expected to take action to avoid any migraroty species to become endangered[214]. They are also expected to propose the listing in Appendix I of an endangered species in their territory and provide immediate protection to them, or conclude agreements or Memoranda of Understanding to protect species inserted in Appendix II. Both these two agreements come together with acctions plans to implement them and are usually supported by environmental NGOs and other stakeholders[215].

[212] See: https://www.cms.int/convention-bodies/standing-committee - last accessed 29/12/2019.
[213] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 301.
[214] CMS Convention, art. II.
[215] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 301.

As it can be read in article III paragraph 4, Range States are also expected to conserve and, where possible, restore those habitats where species in Appendix I live as well as prevent or either remove the adverse effects of activities or obstcles that stop species migration[216].

Another key action to implement the Convention is prevent actions or factors that would endanger even further the species such as for example controlling the introduction or removing exotic species[217].

Referring to species listed in Appendix I, given that those species are endangered, Parties that are Range States have to prohibit the taking of animals belonging to these species with a few exceptions[218]. Parties are expected to introduce national legislation for the correct implementation of this measure[219].

To monitor the correct implementation of the Convention, States parties are required to submit reports at least six months before each COP meeting stating which measures they are taking to implement the Convention on their territory[220]. These reports are considered the most reliable source of information concerning the status of the migratory species[221]. To ensure compliance with the Convention core articles (Articles III.4, III.5, III.7 and VI.2), the Conference of the Parties established a Review Mechanism during its twelfth meeting adopting Resolution 12.9[222] and Decisions 12.6-12.9[223]: the way this mechanism works is through "a supportive, problem-solving, non-adversarial and facilitative approach, and it aims to create a constructive system that encourages Parties to identify and address their challenges in protecting migratory species"[224]. According to Resolution 12.9, if a Party fails to properly address an implementation matter, the Standing Committee is authorized to, for example, request further information or special reporting from the Party concerned, provide

[216] CMS Convention, art III.
[217] Ibidem.
[218] Ibidem.
[219] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 301.
[220] CMS Convention, art VI.
[221] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 299.
[222] See the Resolution text accessible at: https://www.cms.int/sites/default/files/document/cms_cop12_res.12.9_review-mechanism_e_0.pdf.
[223] See the Decisions text accessible at: https://www.cms.int/sites/default/files/document/cms_cop12_decisions_e_0.pdf.
[224] See CMS webpage about the Review Mechanism accessible at: https://www.cms.int/en/activities/review-mechanism - last accessed: 01/01/2020.

further advice, information and appropriate facilitation of assistance and other capacity-bulding support to the Party concerned, provide in-country assistance, technical assessment or a verification mission, upon consultation and agreement with the Party concerned as well as request an implementation action plan to be submitted to the Standing Committee by the Party concerned identifying challenges and appropriate steps, a time frame for when those steps should be completed and means to assess satisfactory completion.

As for all the conventions, a fundamental element for implementation is financing. To this purpose, the Trust Fund has been created and it is funded by the annual contributions of the Parties as well as contributions from other states, NGOs and the private sector[225]. The contribution of each Party depends on a scale agreed by the COP.

6.4 Effectiveness in protecting migratory species

Given the characteristics of this Convention, is it effectively implemented to protect migratory species worldwide? To answer this question I relied on the study of Karin Baakman, as well as on CMS reports and information available on the CMS website and on a related article of Professor Nele Matz[226].

Even though this Convention is the only one with a global scope about the protection of migratory species and it has strict measures, especially for species listed in Appendix I, it is not yet effective, and the gaps are various.

Starting with the Parties themselves, the fact that some major countries have not ratified the Convention critically undermines its effectiveness given that those countries (like for example the United States) are range States of many of the species listed in the two Appendices of the Convention.

[225] Ibidem, pg 286.

[226] Nele Matz-Lück is Professor of Law at the University of Kiel and co-Director of the Walther Schücking Institute for International Law since October 2011. She specializes in the law of the sea and is a member of the Cluster of Excellence 'Future Ocean', of which she is co-spokesperson since November 2017. Since 2014 she also is adjunct professor at the University of Tromsø, Norway. In May of the same year she became deputy member of the Constitutional Court of Schleswig-Holstein, of which she is now, since February 1st, 2018 a full member.

The absence of some important States exacerbates as well another problem that affects the Convention effectiveness, which is funding. As it can be read on the latest available CMS report of the 45th Meeting of the Standing Committee in 2016, the unpaid pledges amounted to 1,143,118 €, which in percentage means that 67,12% of the pledges has been received from 57 out of the 122 Parties to the Convention[227]. The Standing Committee urges Parties to pay their contribution as soon as possible, but still various Parties did not pay their contribution. In addition, in this report it is stated in paragraph VI about the 2018-2020 budget, that it has to increase due to the fact that CMS has moved to budgeting at the UN Standard Costs following the UN methodology used world-wide, which implies an increase of the salaries. However, it is also stated that the CMS Secretariat does not see it feasible to absorb this increase by savings in other areas. The report about the 2018-2020 budget is not yet available in the website, however the document about financial and administrative matters adopted by the Conference of the parties at its 12th meeting in 2017 "notes with concern that a number of Parties have not paid their contributions to the core budget for 2017 and prior years thus affecting adversely the implementation of the Convention"[228].

In addition to the Trust Fund, during the fourth meeting of the COP in 1994, it was established the CMS Small Grants Programme (SGP)[229] as a financial incentive to finance projects aimed at enhancing the implementation of the Convention. At the beginning it was funded by the Trust Fund and the Programme was called a success given that a great variety of projects was funded and at the same time they managed to attract further funding from donors[230]. However, in 2005 the source funding of the Programme was not anymore the Trust Fund, but the new policy governing SGP established that it was "critically dependent on voluntary contributions"[231]. This change caused a reduction in the financed projects to the point where the CMS working group declared that "a shortage of financial means results to be the main

[227] CMS report of the 45th Meeting of the Standing Committee, 2016, available at: https://www.cms.int/sites/default/files/document/cms_stc45_doc-10-2_expenditure-report-cms-aug16_e.pdf.

[228] CMS document about financial and administrative matters adopted by the Conference of the parties at its 12th meeting in 2017 accessible at: https://www.cms.int/sites/default/files/document/cms_cop12_res.12.2_financial-and-administrative_matters_e.pdf - last accessed: 31/12/2019.

[229] See CMS SGP webpage accessible at: https://www.cms.int/en/activities/small-grants/about - last accessed: 31/12/2019.

[230] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 317.

[231] See CMS SGP webpage accessible at: https://www.cms.int/en/activities/small-grants/about - last accessed: 31/12/2019.

obstacle from many – if not most – Parties to properly implement CMS and to further develop its instruments"[232].

Besides funding, gaps can be found in the measures themselves: as said before, Appendix I species are more strictly protected than species in Appendix II, whose protection depends on the establishment of further agreements, that to be created require political will and additional costs. That is why many migratory species in this Appendix are not protected by any agreement nor memoranda of understanding, and additionally even the agreements in place are not necessarily signed by all Range States (both Parties and Non-Parties), considering also that it is upon Parties themselves to decide whether they are Range States of a specific species or not[233]. In addition, even if the Convention has a global vocation, it can be argued that it is only potentially global given it provides strict protection only to species that are listed either one of the two Appendices established by the Convention[234], providing therefore a limited protection to migratory species in general terms. This is because not all endangered migratory species are listed in Appendix I or II, either for financial or administrative reasons[235].

Furthermore, another major shortcoming of the Convention is the fact that the protection and restoration of species' habitats, as well as the establishment of corridors between range states to facilitate species migration, is mentioned in article III but it is not "elaborated in terms of obligation"[236] even though it would increase the effectiveness of protection.

In the implementation paragraph, it has been mentioned that States have to submit reports concerning the measures they are taking to implement the Convention. However, submission by States are not regular, and there are even countries that never reported: for instance, as it will be analyzed later, one of the four range States that will be analyzed in the third chapter

[232] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 318.
[233] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 335.
[234] Matz N., "Chaos or Coherence? – Implementing and Enforcing the Conservation of Migratory Species through Various Legal Instruments", Max-Planck-Institut für ausländisches öffentliches Recht und Völkerrecht, 2005.
[235] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 298.
[236] Matz N., "Chaos or Coherence? – Implementing and Enforcing the Conservation of Migratory Species through Various Legal Instruments", Max-Planck-Institut für ausländisches öffentliches Recht und Völkerrecht, 2005.

of this study, Gabon, never submitted a report[237]. Given that National reports about implementation are the main source of information, it can be inferred that this lack of continuity leads to an incomplete picture of the real implementation and status of migratory species. This behavior can be interpreted as a sign that Parties give low priority to CMS, concluding that few of them can claim to have fully applied the Convention[238]. This phenomenon is exacerbated by the fact that, as explained by Professor Matz, "confrontational means of enforcement e.g. by sanctions, have mostly been given up in international environmental law in favor of incentive-based non-confrontational measures"[239]. This happens for the CMS Convention as well where, as highlighted for example by the consequences of non-application established in Resolution 12.9, help and assistance is offered to Parties, but there is no mention of actual sanctions.

Migratory species, to be protected, require a higher cooperation effort either among range States and among institutions involved in biodiversity protection as well as NGOs, either national and international, dealing with conservation. In particular, NGOs collaboration played a major role in the Convention implementation and even creation: the IUCN's Law Commission and its Environmental Law Centre was involved in the development of the Convention's text and provided support for the drafting of several CMS's agreements[240]. Cooperation agreements have been signed with various other NGOs, however national have a harder time joining the COP meetings since they need to approval from the state in whose territory they are based and they also lack financial assistance to join COP meetings. This causes a serious lack in implementation, given that national NGOs are representative of the local communities and territory and would be able to provide in field information and knowledge. In fact, as it can be read on Professor Matz article, "The general will to co-

[237] To see CMS National Reports, visit https://www.cms.int/en/documents/national-reports - last accessed: 1/01/2020.
[238] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 309.
[239] Matz N., "Chaos or Coherence? – Implementing and Enforcing the Conservation of Migratory Species through Various Legal Instruments", Max-Planck-Institut für ausländisches öffentliches Recht und Völkerrecht, 2005.
[240] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 289.

operate, even if repeated in decisions of the Conferences of States Parties, is not sufficient, but rather needs implementation[241].

This instrument constitutes a valuable mean to protect migratory species, however given the previously mentioned gaps it is not producing the effects for which it has been created.

In the last chapter of this study the actual implementation of this instrument will be analyzed looking at four range States that are Parties to the Convention taking as an example its application to protect African Elephants.

[241] Matz N., "Chaos or Coherence? – Implementing and Enforcing the Conservation of Migratory Species through Various. Legal Instruments", Max-Planck-Institut für ausländisches öffentliches Recht und Völkerrecht, 2005.

7 CBD: the Convention on Biological Diversity

7.1 Introduction to the Convention

The Convention on Biological Diversity (CBD) is the most recent biodiversity-related Convention and the largest in scope. Entered into force on 29 December 1993, the CBD operates under the auspices of the UN Environmental Program (UNEP).

Like the UNESCO World Heritage Convention, the CBD is almost universal in coverage including 196 parties however, even though the US was among the initiators of this instrument, it did not ratify the Convention.

As outlined in the Convention's preamble, its main aims are: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

It can be inferred that the Convention is not limited to the protection of biodiversity for itself, but it actually aims at providing a framework for the sustainable use of the components of biodiversity (therefore species as well), access to genetic resources, sharing of the benefits arising from the use of genetic resources as well as access to technology[242].

Compared to the previously mentioned Conventions (CMS and CITES) that focus only on species conservation, CBD adopts "an holistic approach to the conservation of the Earth's biological diversity by covering […] all ecosystems, species and genetic resources"[243], therefore protecting the whole biodiversity. It is precisely for its comprehensive approach that this Convention is relevant for this study, given that with its measures it aims at covering the gaps of the other Conventions. In fact, it can be defined as an umbrella Convention.

Notwithstanding its universal approach, species are a fundamental component that the Convention aims at protecting.

Precisely because of its holistic approach it is important to point out that, compared to the other previously described Conventions, this one takes into account the needs of developing

[242] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 335.
[243] Ibidem.

countries[244] as well as the importance of the preservation of indigenous' knowledge and practices. As it can be read in the preamble, it is explicitly mentioned that: "[…] special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies"[245]. About local communities, article 8 *j* states that each Contracting Party shall "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity"[246].

7.2 Institutional Framework

The Institutional Framework of the Convention is composed of the following main bodies: the Conference of the Parties (COP), the Secretariat and the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA). In addition, there are the Working Groups. The COP is the main, governing body of the Convention and consists of representatives of the parties. Members meet every two years to adopt the budget of the Convention, evaluate reports submitted by the contracting parties and subsidiary bodies, review scientific, technical and technological advice on biological diversity, consider amendments to the Convention as well as their protocols and annexes and importantly, it coordinates with the Secretariat of other Conventions to implement actions and avoid duplication of activities.

The Secretariat, provided by United Nations Environmental Program, among its main functions it organizes the COP and Convention meetings, coordinates with other international bodies, and reports on the execution of its functions. The Secretariat is composed of the Executive Secretary, the Division for Social, Economic and Legal matters, the Division for Scientific Technical and Technological Matters, the Biosafety Division, the Division for Implementation and Technical Support and the Division for Resource Management and Conference Services.

[244] Ibidem, pg 297.
[245] Convention of Biological Diversity, preamble.
[246] Convention of Biological Diversity, article 8.

The Subsidiary Body on Scientific, Technical and Technological Advice provides technical advice to the COP and its subsidiary bodies, assesses the status of biodiversity and the types of measures taken in accordance with the Convention's provisions, identifies innovative and efficient technologies, and provides advice on scientific programs and international cooperation in research and development.

The Working Groups are established by the COP and have precise mandates such as terms of reference, duration, the expected outcomes and the reporting requirements[247]. At the moment, as it can be seen in the Convention's website, two of these groups are currently working: the Working Group on Article 8 and the Working Group on Protected Areas.

In addition to these bodies, the Conference of the Parties to the Convention on Biological Diversity created, through decision XII/26, the Subsidiary Body on Implementation (SBI)[248]: it has four main functions, which are the review of the progress in implementation, the strategic actions to enhance implementation, strengthening means of implementation and operations of the convention and the protocols[249]. The SBI met for the first time on May 2016 in Montreal, Canada.

7.3 Implementation

Article VI of the Convention states that Contracting Parties have to develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity and to integrate them into relevant sectoral or cross-sectoral plans, programmes and policies[250]. Linked to this article, article XXVI states that Contracting Parties have to submit to the COP reports concerning measures which they have taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this

[247] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pp 341.
[248] See CBD webpage about the Subsidiary Body on Implementation at: https://www.cbd.int/sbi/ - last accessed: 04/01/2020
[249] Ibidem.
[250] Convention on Biological diversity, article VI.

Convention. In addition, article 10 *a* calls on Parties to include in national decision-making consideration of the conservation and sustainable use of biological resources[251].

The Secretariat has no formal supervisory role, but it prepares the reports that synthetize the national reports prepared by the Contracting Parties[252].

Given that the focal point of this study are species, the articles that deal with the species protection are particularly article 8 and article 9, that regulate respectively in-situ and ex-situ conservation. In particular, article 8 paragraph *d* states that every Contracting Party shall, as far as possible and as appropriate "promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings". Paragraph *f* of the same article focus on the rehabilitation and restoration of degraded ecosystems and the promotion of the recovery of threatened species "through the development and implementation of plans or other management strategies"[253], while paragraph *h* deals with the prevention of the introduction of alien species as well as control or eradicate them given they constitute a threat to ecosystems, habitats and species. Paragraph *k* of the same article clearly states that Parties have to "develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations"[254].

Interestingly, the very first paragraph of article 8 mandate Parties to "establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity"[255], which is a provision that was missing for example in the CMS Convention and that has the potential to increase species conservation. The obligation to establish a system of protected areas and the provisions related to this requirement are seen as central to the CBD by the contracting Parties.[256] In the CBD website it is stated that almost all Contracting Parties have developed a system of protected areas, with 104,791 protected areas listed in the world database on protected areas.

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[251] See CBD webpage about NBSAP accessible at: https://www.cbd.int/nbsap/introduction.shtml - last accessed: 5/01/2019.
[252] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pp 369.
[253] Convention of Biological Diversity, article VIII.
[254] Ibidem.
[255] Ibidem.
[256] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pp 371.

In 2010, the Conference of the Parties, with decision X/2 adopted an revised and updated Strategic Plan for Biodiversity that include the Aichi Biodiversity Targets for the 2011-2020 years, that Parties have to reach through national biodiversity strategies and action plans.

In particular, these Targets are included in the Strategic goals and Strategic Goal C is focused on the improvement of the status of biodiversity by safeguarding ecosystems, species and genetic diversity: Target 12 states that "by 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained"[257] and Target 13 states that "by 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity"[258].

Given the importance of local communities for the Convention implementation mentioned before, Strategic goal E is focused on the enhancement of implementation through participatory planning, knowledge management and capacity building. Target 18 of this strategic goal aims that, by 2020, "the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels"[259].

To implement the Convention, a key element is, like for the previously mentioned Conventions, funding. The CBD has a Trust Fund to which the Parties contribute, even though it serves the purpose of financing the Convention's administration. However, there are two other trust funds: the Special Voluntary Trust Fund for Additional Voluntary Contributions in Support of Approved Activities under the CBD and the Special Voluntary Trust Fund to Facilitate the Participation of Parties in the Process of the CBD.

[257] See Aichi Biodiversity Targets webpage accessible at: https://www.cbd.int/sp/targets/ - last accessed: 5/01/2020.
[258] Ibidem.
[259] Ibidem.

In addition to these funds, given that the Convention takes explicitly into account the needs of the developing countries, articles 20 and 21 are the articles that deal with the financial resources and mechanism. In particular, article 20 clearly states that "The developed country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of this Convention"[260]. On the other hand, article 21 states that "There shall be a mechanism for the provision of financial resources to developing country Parties for purposes of this Convention on a grant or concessional basis"[261]. The Global Environment Facility of the United Nations (GEF) is the mechanism that article 21 is referring to and it provides financial help to developing countries and is funded by the contributions of developed countries. The Conference of the Parties makes an assessment of the amount of funds that developing countries need to implement the Convention before each GEF replenishment cycle[262]. In addition, each project proposal must meet determined criteria, such as, for example, the fact that the requesting country must be on a list of eligible countries as well as that the project must be coherent considering the national priorities and programmes[263].

Another fundamental element that is valued by the COP to enhance implementation is cooperation with environmental NGOs: the Secretariat has signed partnership agreements with 100 organizations[264] , both international and local, such as NGOs as well as universities, museums and scientific institutions, with a remarkable representation at the COP's meetings. Tthe data that these organizations and institutions collect and subsequently provide to the Convention's bodies proven to be important to establish informed policies (for example the data collected by the IUCN to update the Red List of Threatened Species). In addition, many of them are involved in the protected areas' project[265].

[260] CBD Convention, article 20.
[261] CBD Convention, article 21.
[262] See CBD Financial Mechanism and Resources webpage accessible at: https://www.cbd.int/financial/ - last accessed: 6/01/2019.
[263] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pp 393.
[264] Ibidem, pg 344.
[265] Ibidem, pg 345.

7.4 Effectiveness in protecting species and protected areas

Considering what contracting Parties have to do to apply the Convention, are they effectively implementing it? And is it effective in protecting species and protected areas?

To answer this question I relied on the work of Karin Baakman, on the Biodiversity Indicators Partnership[266], on a scientific study that assesses the Biodiversity Trends, on the Global Database on Protected Area Management Effectiveness and on the 2018 WWF Living Planet Report.

Even though the Convention has almost universal membership, cooperates with a vast array of NGOs (compared also to the other Conventions previously analyzed), has stated its objectives clearly, the Convention is not yet effective in protecting species and protected areas.

First, focusing particularly on protected areas, that are included in Aichi Target 11, they are facing some shortcomings. According to the Global Database on Protected Areas, both the protection of terrestrial and marine areas are globally underneath the target. The situation is even worst when looking at the management effectiveness, where the target is 17% for terrestrial areas and 10% for marine areas: terrestrial areas are effectively managed only in the 5% of the times while marine areas only 1% of the times[267]. Another issue concerning protected areas is that many of them are created giving priority to their economic value rather than biodiversity characteristics of that areas[268].

In addition, the tropical areas, which are the areas with the highest density of biodiversity, are the ones more in peril due to land conversion and natural resources exploitation. Considering these areas, the study of Lydia Beaudrot highlights that there are two information challenges that prevent the achievement of Aichi Targets 11 (Protected Areas) and 12 (Preventing Extinctions): a significant disparity in the amount of tropical biodiversity

[266] The 2010 Biodiversity Indicators Partnership coordinates the delivery and communication of the suite of indicators measuring progress towards the 2010 Biodiversity Target.

[267] UNEP-WCMC and IUCN (year), Protected Planet: The Global Database on Protected Area Management Effectiveness (GD-PAME) [On-line], [insert month/year of the version downloaded]. Cambridge, UK: UNEP-WCMC. Available at: www.protectedplanet.net.

[268] Baakman K., Testing times: the effectiveness of five international biodiversity-related Conventions, The Netherlands, Wolf Legal Publishers, 2011, pg 372.

data that exist in comparison with higher latitude regions, that makes it harder to evaluate the tropical species response to threats with the subsequent difficulty in designing conservation measures[269]. The second one is a lack of in situ data concerning populations in tropical protected areas, therefore evaluations are mainly based on experts' opinions. The author argues that:

"Meeting Aichi Targets requires systematic monitoring coupled with indicators to track conservation progress. Most published data sources used with Aichi Target 12 indicators are relatively old given the ten-year time frame for evaluating progress under the CBD, are biased geographically toward temperate areas, rely heavily on expert opinion or disparate sources of information, may suffer from publication bias, and do not account for imperfect detection, which can bias estimates" [270]

According to the Living Planet Index (LPI)[271] indicates that from 1970 to 2014 there has been an overall decline of species of an amount of 60%. This data shows that even though CBD targets were in place as well as other international policy agreements, species continued to decline[272].

Given that the Strategic plan ends in 2020, more up-to-date data will be available in the next years, however the WWF Report states that the targets will be hardly achieved by 2020[273].

[269] Beaudrot L. et Al., "Standardized Assessment of Biodiversity Trends in Tropical Forest Protected Areas: The End Is Not in Sight", Plos biology, 2016.
[270] Ibidem.
[271] The Living Planet Index (LPI) is an indicator of the state of the global biodiversity and the health of our planet. It has tracked the population abundance of thousands of mammals, birds, fish, reptiles and amphibians from around the world for two decades.
[272] WWF Living Planet Report 2018 available online at: https://www.zsl.org/sites/default/files/Living%20Planet%20Report%202018%20-%20Summary%20Report.pdf.
[273] Ibidem.

8 Have anthropocentrism and colonial heritage influenced the development and effectiveness of international environmental instruments?

Even though there is greater awareness globally about the threats species and biodiversity are facing, awareness that led the international community to establish instruments to enhance conservation, authors like Rachel Adam and Mark Cioc, have criticized them because of their anthropological approach and colonial heritage:

"the major animal-protection treaties of the early twentieth century are best understood as international hunting treaties rather than as conservation treaties. […] hunters and ex-hunters were the guiding force behind the treaties, and these hunters were often far more concerned with the protection of specific hunting groups and prized prey then with the safeguarding of entire habitats, ecosystems, or bioregions"[274]

Indeed, the 1900 London Convention cited earlier in this chapter was a hunting and trade agreement to manage African fauna during the peak of colonialism, and it paved the way to the establishment of later conventions. As Adam explained "it arose from the conviction shared by Great Britain and Germany that only European colonial cooperation could prevent the elephant's extinction"[275], thus leaving no space for local communities to manage their own resources.

The author added that seventy years later with the development of the IUCN treaty, a new generation of conservation conventions fostered the idea that new independent African nations could not protect their natural resources, justifying the organization's intervention: "drawing on positivist jurisprudence as the godfather of colonialism, Europeans had assiduously wrought international law into the justification for the invasion, conquest and rule of non-European peoples and their lands, cloaked by 'civilizing mission'"[276].

[274] Cioc M., "the game of conservation, international treaties to protect the world's migratory animals", Ohio university press, 2009.
[275] Adams R., "Elephant treaties: the colonial legacy of the biodiversity crisis", Hanover and London, 2004, pp 16.
[276] Ibidem.

More importantly, the author sustains that colonial constructivists shaped norms that would become standards of behaviour for future environmental activists: "they drafted early environmental laws that would serve as models for environmental legislation throughout the rest of the world"[277].

IUCN itself was funded in 1948 largely by European countries, with strong British and American influence[278]. Therefore, IUCN's colonial origins could affect biodiversity protection strategies, as many of the most important conventions were created within its framework.

Despite the many conventions in place, biodiversity loss continues at increasing rates[279], with civil society increasingly aware of a need to foster action internationally, as demonstrated by the ongoing climate strikes around the world and with the speech delivered by Greta Thunberg, a Swedish climate activist and leader, at the UN[280].

The question that remains to be answered is why the conservation conventions have not been actually effective, or at least not effective to date. Again, as Adam argues:

"Today's global biodiversity conventions are not the result of a measured, well-considered process to reach the most effective governance structure for biodiversity. Instead, they are the continuation of colonial regimes through which Europeans governed non-Europeans; and rather than mechanisms for global cooperation, they are meant for developing countries deemed to lack governance"[281]

Therefore, colonial heritage seemed to have influenced both the development and the effectiveness of these international agreements. Furthermore, policymakers clearly deploy an anthropocentric stance, prioritizing growth, development, well-being but in a way that

[277] Ibidem.

[278] Cioc M., "the game of conservation, international treaties to protect the world's migratory animals", Ohio university press, 2009.

[279] Report of Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019.

[280] "Greta Thunberg condemns world leaders in emotional speech at UN". Article available at : https://www.theguardian.com/environment/2019/sep/23/greta-thunberg-speech-un-2019-address - last accessed: 24/09/2019.

[281] Adams R., "Elephant treaties: the colonial legacy of the biodiversity crisis", Hanover and London, 2004, pp 11.

reflects human desires and where nature is often, if not always, sacrificed. As reported in Shoreman-Ouimet and Kopnina work:

"with the encroachment of Western Civilization, the global human population has irreversibly depleted natural resources, degraded ecosystems and pushed nonhuman species to extinction. Present-day relationships between culture and conservation thus occur within the context of increasingly globalized industrialization, and the proliferation of a neoliberal economy and ideology. Most societies […] are affected by this neoliberal ideology that emphasizes human, social economic interests at the expense of nonhuman others. […] while economic development may support certain human groups, it has had an enormously deleterious effect on nonhumans"[282]

It can be therefore inferred that biodiversity and species are protected for anthropocentric reasons: this is because what it is sought to be conserved is the possibility to exploit species' genetic characteristics, medical usefulness potential, tourism and similar scopes[283]. After all, the previously mentioned Security Council resolutions have been taken because of human needs, not to foster Elephant protection.

In addition, according to Cioc, these treaties focus on animals that are of particular interest for humans, like for example elephants, the species that will be analysed in the following chapters as a case study, to the detriment of other species.

The author also explains that the national parks that were initially established did not pay attention at all to habitat protection, since they were located in areas of scarce economic interest, without taking into consideration, for example, the migratory routes for migratory species, resulting in partial protection for animals[284]: "European political and economic needs, not ecology, determined the border lines"[285]. This issue has also been highlighted

[282] Shoreman-Ouimet E., Kopnina H., "Culture and Conservation, beyond anthropocentrism", London and New York, 2016.
[283] Peters A., "Novel practice of the Security Council: Wildlife poaching and trafficking as a threat to peace", EJIL talk, 2014.
[284] Cioc M., "the game of conservation, international treaties to protect the world's migratory animals", Ohio university press, 2009.
[285] Ibidem.

earlier in this chapter when talking about the protected areas established under the Convention on Biological Diversity.

The point of highlighting these approaches is not to sustain that humans' needs do not have to be taken into consideration, because the truth is that we as species are all in the same situation. The idea is to realize that there is a strong need to align the needs of all species, finding a balance which will assure our future as well as that of all the other creatures on Earth.

CHAPTER II
CASE STUDY: THE SITUATION OF THE ELEPHANT POPULATION IN AFRICA

1 Plight of the elephants: the threats to the species conservation

The elephant, one of the most charismatic mammals of the animal world and currently the biggest walking on Earth. It is a species known and admired for being emphatic, smart and caring towards the members of their own group.

Unfortunately, this species is also known for being critically endangered due to various causes such as poaching and habitat loss that leads to human-elephant conflict: the latest IUCN report of 2016 concerning the African Elephant Status Report is the first one in 25 years to report a continental decline in Elephant numbers[286].

The first part of this chapter will describe the threats that this species is facing, analyzing in depth the poaching phenomena and the causes of habitat loss ad human-elephant conflict.

Following this part, the continental as well as sub-regional situation of the trends of African elephants numbers will be described through a graph that displays data from 1995 to 2016.

In addition, it will be then explained the nowadays well documented existence of two species of African elephants: savanna and forest elephants and why it is important that international instruments protecting species recognize this difference.

The chapter will be concluded describing the importance of protecting the elephants, from their role in maintaining ecosystems and the consequence of their decline to the economic benefits that this species brings.

[286] IUCN African Elephant Status Report 2016.

1.1 Poaching

Since colonization, poaching has always affected the African elephant population and it is currently the main cause of its loss. In 1970s and 1980s there has been a surge in poaching for ivory, which was followed by another one that started in 2006 and continues nowadays[287], with 2011 and 2012 reaching poaching records: "it is estimated that in 2011, approximately 7.4 per cent of the total elephant populations in elephant sites across Africa were killed illegally"[288].

The Monitoring the Illegal Killing of Elephants Programme (MIKE), is the CITES programme established by the Conference of the Parties in 1997 with the aim of monitoring the illegal killing of elephants to inform range States, providing them with useful information to improve the species' management in their territory[289].

To evaluate poaching levels, MIKE base these results on the Proportion of Illegally Killed Elephants (PIKE), "calculated as the number of illegally killed elephants found divided by the total number of elephant carcasses encountered by patrols or other means, aggregated by year for each site"[290]. The data are collected by rangers in the MIKE designated sites spread across the four African regions.

The latest MIKE Report analyzing data received until 31st December 2016 reports an increase in illegal killing of elephants continentally starting from 2006 with a peak in 2011 with a subsequent slight decline afterword[291]. Despite the decline post 2011, poaching levels remain high, with more elephants dying from poaching than from natural reasons[292].

[287] Ibidem.
[288] UNEP, CITES, TRAFFIC, IUCN Report "Elephants in the Dust – The African Elephant Crisis. A Rapid Response Assessment", 2013, available at: https://www.iucn.org/content/elephants-dust-african-elephant-crisis-a-rapid-response-assessment.
[289] MIKE Report, levels and trends of illegal killing of elephants in Africa to 31 December 2016 – preliminary findings.
[290] Ibidem.
[291] Ibidem.
[292] Ibidem.

Looking at the data regionally, it emerges that the Central Africa region is the area most affected by poaching with a perilously high PIKE level[293] that prevents elephants from naturally reproduce and replenish.

Among the range States that will be analyzed in the following chapter, two are Central African States, namely Gabon and the Democratic Republic of the Congo (DRC). Both of them are home to forest elephants and both those countries have been affected by poaching, at different intensities. As it will be illustrated more in detail in the following chapter, in DRC poaching for ivory is a serious problem, which affected also World Heritage sites[294]. According to a TRAFFIC report concerning Ivory Markets in Central Africa, because of armed forces present in the territory, levels of poaching soared leading to a decrease in elephant population in the area of Kisangani and northern and southern Kivu provinces[295]: groups like Lord's Resistance Army (LRA) as well as Forces Démocratique de Libération du Rwanda (FDLR) poached elephants to obtain ivory to obtain finances, leading to the United Nations Security Council to adopt a resolution concerning DRC to authorize sanctions against poachers perceived as a threat to peace[296]. The same report document that according to the Institut Congolais de Conservation de la Nature (ICCN - Congolese Institute for the Conservation of Nature), Virunga National park in 1995 was home to proximally 2,700 elephants, figure that dropped to 300 individuals in 2009[297]. It is therefore believed that until these forces continue to operate, elephant conservation will be very hard even if, as it will be displayed further in this study, the Country implemented adequate measures and laws to achieve compliance with the Conventions.

In Gabon, Minkébé National Park constituted a safe place for forest elephants given it is a remote protected area where a large elephant population was living: 50% of forest elephants live in Gabon. A study carried out through the years 2004 and 2014 revealed a 78%-81% loss

[293] UNEP, CITES, TRAFFIC, IUCN Report "Elephants in the Dust – The African Elephant Crisis. A Rapid Response Assessment", 2013, available at: https://www.iucn.org/content/elephants-dust-african-elephant-crisis-a-rapid-response-assessment.

[294] Ibidem.

[295] TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009, 2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf.

[296] Peters A., "Novel practice of the Security Council: Wildlife poaching and trafficking as a threat to peace", EJIL talk, 2014.

[297] Ibidem.

in elephants due to cross-border poaching[298]. In fact, the same study reports that it is evident that poaching was the cause of such a decline, with ecoguards reporting 161 carcasses of poached elephants between 2012 and 2015[299].

Eastern African is another region heavily affected by poaching, recording a 50% decline in elephant population since 2007 caused by a huge loss of Tanzanian elephants, amounting to more than 60% loss of individuals[300]. Tanzania too is a range State analyzed in this study due to its alarming decrease in elephant population: it is reported that the majority of illegal killings occurred in Selous Game Reserve[301], a UNESCO World Heritage site which is, as will be explained further, the only Tanzanian site inserted in the Danger list.

In West African range States the population of elephants is small and fragmented, therefore it is reported to be vulnerable to rising levels of poaching with the subsequent risk of extinctions[302].

Finally, Southern Africa is the region hosting the biggest elephant population[303]. Nevertheless, poaching is growing in this area too, without having the same impact that it had in the other areas. Zimbabwe, another range State analyzed in this study, is reported to have been suffering from poaching[304].

However, poaching does not cause only issues concerning population declines: it actually causes serious issues to elephants' social system and behavior[305]. It is reported that "Poaching alters elephant dynamics by reducing survivorship and life expectancy, skewing sex ratios, increasing the number of orphans, and preferentially removing old, experienced individuals"[306] which can cause issues to the survival and reproduction of the species. In

[298] Poulsen J. R. at Al, "Poaching empties critical Central African wilderness of forest elephants", Current Biology, vol 27, 2017.
[299] Ibidem.
[300] IUCN African Elephant Status Report 2016.
[301] UNEP, CITES, TRAFFIC, IUCN Report "Elephants in the Dust – The African Elephant Crisis. A Rapid Response Assessment", 2013, available at: https://www.iucn.org/content/elephants-dust-african-elephant-crisis-a-rapid-response-assessment.
[302] Ibidem.
[303] IUCN African Elephant Status Report 2016.
[304] Ibidem.
[305] Breuer T. et Al., "The consequences of poaching and anthropogenic change for forest elephants", Conservation Biology, Vol 30, No 5, 2016.
[306] Ibidem.

addition, it has been widely reported that female leaders have a fundamental role in their group given they have the responsibility of sharing the knowledge to their herd. The loss of experienced female individuals has the potential of disrupting social and ecological knowledge[307].

Among the reasons that drive poaching are customers willing to pay high prices for ivory products: demand from China skyrocketed in recent years turning it into the main destination for illegal ivory[308].

Illegal trade in ivory products is also fostered by markets and shops, where ivory goods are easily available[309]. This is mainly due to lack of law enforcement, allowing criminals to continue to sell such products and subsequently creating demand for ivory.

1.2 Habitat loss and human-elephant conflict

Another major cause for elephant population decrease is habitat loss, which is a consequence of human population growth, clearing land for pasture and agriculture and building infrastructures. It is reported that 29% of elephant range has been altered because of infrastructure building, human population growth and agricultural expansion, with the possibility by 2050 to see this figure reach a 63%[310]. If this forecast will actually turn into reality, it may imply that elephants may go extinct in parts of Central and West Africa, as well as record a relevant reduction in Eastern Africa. Only Southern Africa would remain approximately intact[311].

For instance, in Central Africa the logging industry expanded to the point that it changed elephants' habitats[312]. In their essay, Professor Thomas Breuer of the Global Conservation

[307] Ibidem.
[308] UNEP, CITES, TRAFFIC, IUCN Report "Elephants in the Dust – The African Elephant Crisis. A Rapid Response Assessment", 2013, available at: https://www.iucn.org/content/elephants-dust-african-elephant-crisis-a-rapid-response-assessment.
[309] Ibidem.
[310] Ibidem.
[311] Ibidem.
[312] Breuer T. et Al., "The consequences of poaching and anthropogenic change for forest elephants", Conservation Biology, Vol 30, No 5, 2016.

Program based in New York together with Professor Maisels from the University of Sterling and Professor Fishlock of the Amboseli Trust for Elephants state that:

"However, in reality, protection resources are often lacking, and all populations without protection have dramatically declined in the last decade. Further habitat fragmentation and alteration is likely in the near future because most forest is suitable for palm-oil plantations and mining operations the establishment of which will convert existing habitats"[313].

This erosion of elephant range leads to another linked cause of habitat loss, which is human-elephant conflict.

Given the previously mentioned increase in human population and the increase in human activities such as the expansion of agricultural activities into areas that were previously natural habitats, the encounter with wildlife is a more and more frequent phenomena, an encounter that is not always positive. In fact, elephants can create huge damages to crops and homes in human areas, leading also sometimes to the death of those farmers that try to stop them. Such an issue often leads to hostility towards conservation programs and often to the killing of the elephants[314].

In a study published on the scientific journal Biological Conservation, it is reported that often human and elephants have to share the same resources, resulting therefore in conflict: for instance, it has been found that elephants' space use is determined by water availability[315].

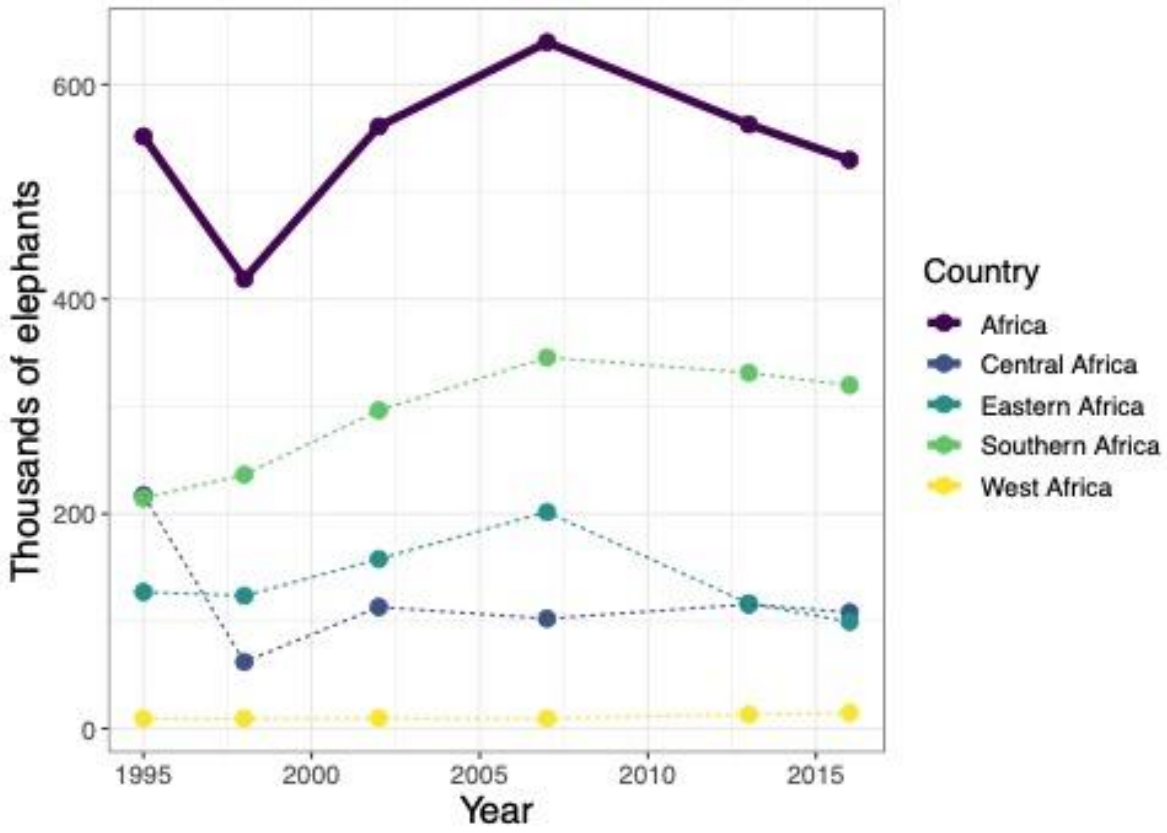
The problem of human-elephant conflict has been long underestimated, given that the international community was more concerned about poaching. It has been reported that for instance in Kenya the rising of movements to protect wildlife largely ignored the increasing intolerance of rural communities that were having troubles living close to wildlife without gaining any benefit from it and at the same time exercising no influence in national policy[316].

[313] Breuer T. et Al., "The consequences of poaching and anthropogenic change for forest elephants", Conservation Biology, Vol 30, No 5, 2016.
[314] Pozo R. A., et Al., "Elephant space-use is not a good predictor of crop-damage", Biological Conservation, 2018.
[315] Ibidem.
[316] Western D. et Al, "Finding space for wildlife beyond national parks and reducing conflict through community-based conservation: the Kenya experience", PARKS, vol 21.1, 2015.

To solve fill this gap, it has been recognized that involving local communities was of fundamental importance: a successful example is constituted by the Amboseli National Park, where it has been introduced a fee called "payment for ecosystem services" paid to the local communities of farmers to support the migratory wildlife herds[317]. In addition, locals were encouraged to create touristic accommodations in order to obtain direct profits and be more prone to sustain conservation[318]. This way, it has been created an incentive for local communities to protect wildlife given that it provided them with direct benefits. In fact, the CBD recognizes the importance of the involvement of local communities to the point that it has been turned in one of the AICHI targets to be achieved[319].

[317] Ibidem.
[318] Ibidem.
[319] See Aichi Biodiversity Targets webpage accessible at: https://www.cbd.int/sp/targets/.

2 Elephant population situation in Africa, past and present: a data review



The graph above illustrates the situation of African elephants in the whole continent as well as in the four main sub-regions from 1995 to 2016, dates referring to the first available African elephant status report to the last. The data were collected by governments, conservation agencies and researchers and subsequently stored in the African Elephant Database, which is managed by the African Elephant Specialist Group (AfESG) and is available online for consultation[320].

[320] African Elephant Database accessible at: http://africanelephantdatabase.org/.

As reported in the latest report, for the first time in 25 years a continental decline of elephant numbers has been recorded[321], which has to be traced back to the management of the previous years, which will be now discussed in detail.

As it can be seen from the graph, around 1998 there has been a major decline at the continental level with a huge loss of elephants: the root cause of this loss could be the start of civil wars and inter-nation conflict in 11 out of 37 range states as well as an economic recession coupled with an increase in corruption[322]. For these reasons, there has been a lack of financial resources to assure elephant conservation.

From 2002 to approximately 2007 there seems to be an increase in population numbers continentally, however in the 2002 report it is stated that even if the figures are higher, it is not possible to give a precise indication of changes in elephant population throughout the years compared to the previous report[323]. Importantly though in the 2007 report it is reported that the overall quality of information has improved by 20% since the 2002 report due to new surveys conducted in unassessed areas and the replacement of guesses with estimates from systematic surveys[324]. Therefore, it can be inferred that the increase in elephant population during those years has actually occurred.

However around those years a new surge in poaching started, which continued till today and determining the present continental decline reported on the latest report. This decline is also influenced by habitat loss and human-elephant conflict as described in the previous paragraph of this same chapter.

Looking at the situation regionally, from the latest report it emerges that southern Africa "has the largest extent of elephant range of any region, and accounts for 42% of the species' total range area"[325] followed by Eastern and Central Africa with respectively 28% and 25% of the total. The lowest percentage of range area is recorded in West Africa, with only 5% of the total[326].

[321] IUCN African Elephant Status Report 2016.
[322] IUCN African Elephant Status Report 1998.
[323] IUCN African Elephant Status Report 2002.
[324] IUCN African Elephant Status Report 2007.
[325] IUCN African Elephant Status Report 2016.
[326] Ibidem.

In particular, Central Africa between 1995 and 1998 saw a huge decline in elephant population probably fostered by civil war that started in DRC and Congo, which also turned surveys into a difficult task to carry out. In the following years the population seem to grow and stabilize, perhaps due to the establishment of conservation programmes in national parks and reserves during the 1990s[327]. However, in the 2016 report it is reported that between 2002 and 2011 a decline of 60% in elephants was recorded and the population continued to decline till 2014 of about 9% per year[328].

As far as Eastern Africa is concerned, from 1998 to 2002 there seem to be an increase in elephant numbers, with more reliable data recorded in various eastern countries confirming the presence of elephants, with the highest increase recorded in Tanzania[329], stating that it was the only country that implemented a national elephant conservation strategy[330].

However, in the latest report it is reported that Eastern Africa is the region that has been most affected by poaching which caused a 50% decline in estimates from the previous report of 2007. The cause of such loss in elephants is due to a 60% decline recorded in Tanzania[331].

On the other hand, as it can be observed from the graph, the Southern Africa region records increasing numbers of elephants. Throughout all the reports it has been reported that the Southern Africa countries hold the largest number of elephants on the continent, the majority of whom live in the Kavango Zambezi Transfrontier Conservation Area[332]. This high number of elephants is due to the fact that in those countries there has been more stability and peace[333] throughout the years, with the only exception of Angola. Poaching though is rising too in this region[334]. In addition, one population in Angola has been reported to be lost[335].

The West Africa region instead throughout all the reports has been reported to have small and fragmented elephant populations, which are also under pressure due to resources' usage

[327] IUCN African Elephant Status Report 2002.
[328] IUCN African Elephant Status Report 2016.
[329] IUCN African Elephant Status Report 2002.
[330] Ibidem.
[331] IUCN African Elephant Status Report 2016.
[332] Ibidem.
[333] IUCN African Elephant Status Report 1998.
[334] Ibidem.
[335] Ibidem.

by humans[336]. The most alarming data revealed by the latest report is that compared to the 2007 report, a loss of twelve elephant populations has been recorded, one in each of these countries: Cote d'Ivoire, Ghana, Guinea Bissau, Sierra Leone and Togo[337].

3 Savanna and forest elephants, two different species

For a long period of time savanna elephants and forest elephants have been identified and therefore managed as one single species. However, a study published in the scientific journal PLOSBiology revealed that actually savanna and forest elephants are two different species as much as are Asian elephant and mammoths[338]:

"*We have used a combination of modern DNA sequencing and targeted PCR amplification to obtain a large data set for comparing American mastodon, woolly mammoth, Asian elephant, African savanna elephant, and African forest elephant. […] A surprising finding from our study is that the divergence of African savanna and forest elephants—which some have argued to be two populations of the same species—is about as ancient as the divergence of Asian elephants and mammoths. Given their ancient divergence, we conclude that African savanna and forest elephants should be classified as two distinct species*."[339]

In fact, savanna and forest elephant have also distinct physical characteristics: forest elephants are smaller compared to savanna elephants with thinner tusks, rounded ears and different skull morphology[340].

In addition, as the name suggests, forest elephants live in the tropical forests of Africa (located primarily in DRC and Gabon), while savanna elephants live in savanna, bush and

[336] IUCN African Elephant Status Report 2016.
[337] Ibidem.
[338] Rolhand N. et Al., "Genomic DNA Sequences from Mastodon and Woolly Mammoth Reveal Deep Speciation of Forest and Savanna Elephants" PLOSBiology, 2010.
[339] Ibidem.
[340] Roca L. A. et Al., "Genomic inferences from Afrotheria and the evolution of elephants", Current Opinion in Genetics & Development, 2005.

slightly forested regions[341] which are located predominantly in Eastern and Southern Africa. Furthermore, their social life is different as well, given that compared to savanna elephants, forest elephants live in smaller groups and "communicate with lower-frequency vocalizations"[342].

Another relevant difference between the two species that will be described more in depth in the next paragraph is the different contribution they provide to the ecosystems where they live: "Savanna elephants keep the canopies open and promote diversity, and forest elephants disperse seeds that maintain the world's second-largest rainforest"[343].

The reason why such a discovery is important is that, given they are two different species, conservation and management should be carried out differently, considering also that they face threats at different levels and have different needs due to the different habitat where they live.

At the present time, most of the biodiversity-related Conventions and some important International Organizations do not recognize the difference between the two species: for instance, CITES, that is, as illustrated in the first chapter, one of the most important Conventions concerning species, does not recognize the two species. IUCN too still categorize African elephants as one species in the Red List of Threatened Species.

The only Convention that distinguishes the two species is CMS.

Subsequently, the fact that conservation has been carried out in the same way for both species has been reported to have slowed down efforts to conserve them properly and at the same "possibly have doomed many populations of both species"[344].

The importance of recognizing the two different species lies also in the fact that this way trends of these two populations can be observed separately, providing more accurate data that will inform conservation actions properly[345].

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[341] Ibidem.

[342] Ibidem.

[343] "Isn't it time we recognize African elephants as 2 separate species?", Scientific American. Article available at the following link: https://blogs.scientificamerican.com/extinction-countdown/african-elephant-species/.

[344] "Isn't it time we recognize African elephants as 2 separate species?", Scientific American. Article available at the following link: https://blogs.scientificamerican.com/extinction-countdown/african-elephant-species/.

[345] Ibidem.

4 The importance of protecting the elephants

This whole study attempts to assess the efficacy of the most important biodiversity-related Conventions through the analysis of the situation of the African elephants to assess whether the measures taken by range States in compliance with the Conventions are actually protecting the species or not.

However to establish policy there is the need to know from what this species must be protected, therefore in the previous paragraphs it has been displayed what are the threats elephants are facing, the trends of the populations in the continent and the importance of the recognition of the two species.

Nevertheless, there is another question that must be addressed: why are elephants important to protect?

First of all, considering the ethical reasons for protecting biodiversity mentioned in the first chapter of this study, it can be affirmed that elephants have an intrinsic value independently from the value humans attribute to them and therefore have the right to live their life.

Considering also animal sentience, elephants have displayed emphatic behaviors towards the other members of their species: for instance, it has been reported that elephants touch each other, greet each other when they have been apart for a while and even help other group members under threat[346]. In addition, elephants have been reported to be quiet and tense when they see and approach a carcass of a member of their family[347].

From the ecological point of view instead, both savanna and forest elephants play a particular role in maintaining ecosystems and are deeply intertwined with the environment in which they live.

Starting with forest elephants, they have three main functions: seed dispersing, nutrient recycling and herbivory and physical damage[348].

[346] Glennon, M. J., "Has International Law Failed the Elephant?", The American Journal of International Law, Vol84, No. 1, pp. 1-43, Cambridge University Press.
[347] Ibidem.
[348] Poulsen J. R., "Ecological consequences of forest elephant declines for Afrotropical forests", Conservation Biology, 2017, Volume 00.

Considering seed dispersing, forest elephants are "the largest fruit-eating animals on the planet"[349] and are fundamental seed dispersers, contributing to the reproduction of a large variety of plants. Seed dispersal is enhanced because these animals travel for kilometers (some seeds have been found up to 57km from the parent tree[350]). In addition, studies revealed that elephants' digestion of seeds may influence germination, reducing the time of it, and it constitutes also "one of the main determinants of the spatial pattern of seed dispersal"[351]. It also enhances seed survival partially because of "the protective and nutrient-rich growth environment provided by elephant dung"[352]. It can be inferred than through seed dispersal elephants contribute to the maintenance of biodiversity[353].

Considering nutrient recycling, studies revealed that because of the great variety of fruits these animals eat, they deposit nutrient-rich dung in the soil, contributing to the cycling of substances that act like fertilizers[354]. This way they also foster an homogeneous nutrient distribution in the environment[355].

Through herbivory and physical damage, elephants actively modify the environment: this is because given their huge size and by moving in the forest they destroy trees, contributing to the maintenance of forest clearings and trails systems[356].

Savanna elephants too are also important seed dispersals, even though from a lowest diversity of plant species[357]. It is reported that "Among all elephant taxa, savannah elephants from arid

[349] Ibidem.
[350] Poulsen J. R., "Ecological consequences of forest elephant declines for Afrotropical forests", Conservation Biology, 2017, Volume 00.
[351] Campos – Arceiz A. et Al., "Megagardeners of the forest – the role of elephants in seed dispersal", Acta Oecologica, 2011.
[352] Poulsen J. R., "Ecological consequences of forest elephant declines for Afrotropical forests", Conservation Biology, 2017, Volume 00.
[353] Beaune D. et Al, "Seed dispersal strategies and the threat of defaunation in a Congo forest", Biodiversity Conservation, 2013.
[354] Campos – Arceiz A. et Al., "Megagardeners of the forest – the role of elephants in seed dispersal", Acta Oecologica, 2011.
[355] Poulsen J. R., "Ecological consequences of forest elephant declines for Afrotropical forests", Conservation Biology, 2017, Volume 00.
[356] Ibidem.
[357] Campos – Arceiz A. et Al., "Megagardeners of the forest – the role of elephants in seed dispersal", Acta Oecologica, 2011.

and semi-arid environments are likely to provide the longest seed dispersal distances (e.g. elephants in Namibia and Mali frequently travel more than 50 km in 24 hours; Viljoen, 1989; Blake et al.,2003)[358].

Savanna elephants too interact with the environment in which they live through Physical Damage given that those animals "break and up-root trees up to 40–60 cm in diameter"[359].

Given the functions that these species have, their loss may have serious repercussions for ecosystems and the environment: in Professor Poulsen study it is reported that the reduction in elephants seed dispersal action will cause a reduction in genetic diversity as well as stop the colonization of new habitats[360]. In the same study it is also reported that "the loss of large animals such as elephants is expected to reduce the carbon storage potential of the forest"[361].

In another study it is reported that the reduction of seed dispersal will also cause "a simplification of the community-level interaction network, an increase in the vulnerability of ecosystem function, and changes in the demography and distribution of a considerable number of plant species"[362].

[358] Ibidem.
[359] Poulsen J. R., "Ecological consequences of forest elephant declines for Afrotropical forests", Conservation Biology, 2017, Volume 00.
[360] Ibidem.
[361] Ibidem.
[362] Campos – Arceiz A. et Al., "Megagardeners of the forest – the role of elephants in seed dispersal", Acta Oecologica, 2011.

CHAPTER III
AN ASSESSMENT OF THE CONVENTIONS' IMPLEMENTATION AND EFFECTIVENESS THROUGH THE ANALYSIS OF THE ELEPHANT CONSERVATION IN FOUR AFRICAN RANGE STATES

1 Conventions' compliance and implementation effectiveness evaluation: theory and affecting facts

National implementation is fundamental for compliance with Conventions and, as suggested by the title, this chapter aims at assessing the actual compliance and implementation effectiveness at national level, particularly about the conservation of the Elephants populations.

To start this assessment, the first thing to do is to clarify what it is exactly meant with compliance and implementation. According to the Guidelines on compliance with and enforcement of multilateral environmental agreements developed by the Governing Council of the United Nations Environmental Program (UNEP):

- *Compliance* means "the fulfilment by the contracting parties of their obligations under a multilateral environmental agreement and any amendments to the multilateral environmental agreement"[363];

[363] United Nations Environmental Program (UNEP), "Guidelines on compliance with and enforcement of multilateral environmental agreements".

- *Implementation* means "all relevant laws, regulations, policies, and other measures and initiatives, that contracting parties adopt and/or take to meet their obligations under a multilateral environmental agreement and its amendments, if any"[364].

After providing a clear and official definition of these two fundamental terms, it is also important to define which aspects of compliance will be evaluated and how.

In this study, first of all outcomes will be looked at. With the word outcomes it is meant "the laws, policies, and regulations that States adopt to implement an International Environmental Agreement (IEA) and transform it from international to national law"[365]. Given that these Conventions are binding instruments, it is presumed that these agreements must be respected[366] as well as they must be implemented in good faith according to the *pacta sunt servanda* principle, framed in the Vienna Convention at article 26[367]. This is a very important aspect of compliance, given that from the way Parties actually apply Conventions nationally it derives the effectiveness necessary to reach the Conventions' goals. It must be highlighted that it could be that States may already have in place measures that legislate a convention-related aspect as well as it could be that States do not have any or few legislation on environmental or conservation matters, making it harder for Contracting Parties to implement the Conventions[368]. However, the importance of establishing national provisions derived from international agreements has also been clearly reaffirmed in the preamble of the World Charter for Nature where it is stated that there is the need "for appropriate measures, at the national and international, individual and collective, and private and public levels, to protect nature and promote international co-operation in this field"[369].

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[364] Ibidem.

[365] Mitchell R. B., "Compliance Theory: Compliance, Effectiveness and Behaviour Change in International Environemental Law", in Bodansky, D. Brunnée, J. & Hey, E. (eds.), "The Oxford Handbook of International Environmental Law", Oxford University Press, 2007.

[366] Carreau, D. & Marrella, F. (2016). Diritto Internazionale. Milano: Giuffè Editore, p. 134.

[367] Ibidem.

[368] Redgwell C., "National Implementation", in Bodansky, D. Brunnée, J. & Hey, E. (eds.), "The Oxford Handbook of International Environmental Law", Oxford University Press, 2007.

[369] World Charter for Nature, 1982.

The second aspect this study will focus on to assess effectiveness are impacts, which means the actual "changes in environmental quality"[370]; in the case of this analysis, species conservation improvement or species loss. This is because it has been assumed that, after a reasonable amount of time, the lack of tangible improvements subsequent to the Convention ratification implies that the measures taken are not enough to reach the objective or are not effectively implemented or enforced.

In practice, what will be done in this chapter is to consider four African Elephant range States that ratified the analyzed Conventions which aim is species, habitats and biodiversity conservation, describe how these States have, if they actually did, implemented them through the national legislations and other measures, to subsequently look at the African elephant population data as a case study to assess the actual effectiveness of the taken measures. Outcomes and impacts.

In particular, after identifying the national measures and legislations of the selected range States, this study expects to find that two of these countries, given that they have declining populations of African Elephants[371], are not in compliance with particular provisions of the agreements. However, it must be also taken into account that results may actually diverge, either in a positive or negative way, from this expectation given that they could be influenced by factors that are not a direct consequence of the agreements application[372].

Nevertheless, the aim of this analysis, through researching on actions taken by States and actual results, is that of suggesting how a greater compliance, if needed, can be achieved and where to place a greater effort to reach Conventions' goals.

To recall what has been said in chapter I, it emerged that the analyzed biodiversity-related Conventions were not completely effective due to various causes, mainly law-enforcement, funding reasons, political will, a scarce involvement of civil society (either NGOs, local communities and other stakeholders), not very effective monitoring systems, anthropocentric

[370] Mitchell R. B., "Compliance Theory: Compliance, Effectiveness and Behaviour Change in International Environemental Law", in Bodansky, D. Brunnée, J. & Hey, E. (eds.), "The Oxford Handbook of International Environmental Law", Oxford University Press, 2007.

[371] The Elephant population in these Range States will be analyzed in the following subchapter .

[372] Mitchell R. B., "Compliance Theory: Compliance, Effectiveness and Behaviour Change in International Environemental Law", in Bodansky, D. Brunnée, J. & Hey, E. (eds.), "The Oxford Handbook of International Environmental Law", Oxford University Press, 2007.

interests influencing decisions related to biodiversity and species conservation such as trade interests and lack of precision of the Conventions' aims which result in imprecise indications to establish national laws.

This is because governments, like people, decide upon what it is considered to be the best for their interests and therefore if costs are higher than benefits, environmental agreements application generally fails. This is a reason why it is important that Conventions provide incentives, especially financial ones. At the same time, political will and implementation may be influenced by the strength with which Conventions' norms are established: in the first chapter it has been highlighted how important it is that a Convention clearly states its objectives as well as monitoring and enforcement mechanisms. The weakest the norms and the possible consequences noncompliant States may face, the less the possibility that those are enforced.

Another reason that may inhibit agreements application is an actual impossibility due to lack of resources: besides financial issues, there could also be administrative or technological incapacities, an issue that most of developing countries are facing[373] [374].

With administrative incapacities it is meant, for example, the problems that there could be first of all in the establishment of the authorities required by the Conventions (such as CITES that requires the establishment of at least one Management Authority and one Scientific Authority), as well as the subsequent collaboration between those authorities and the government. The administrative problems could also indicate a lack of cooperation between Contracting Parties' bodies such as, for example, border patrols of the Member States of the Conventions.

The international community is more and more aware of the above mentioned difficulties that some Countries, especially the developing ones, face during the implementation of

[373] Mitchell R. B., "Compliance Theory: Compliance, Effectiveness and Behaviour Change in International Environemental Law", in Bodansky, D. Brunnée, J. & Hey, E. (eds.), "The Oxford Handbook of International Environmental Law", Oxford University Press, 2007 .

[374] The lack of technology is a gap that the Convention on Biological diversity tried to fill inserting in article 16 provisions for technology sharing among Contracting Parties.

environmental agreements therefore implementation facilitation has become an important Conventions' component[375].

An example is the establishment of various Trust Funds which aim at financing projects to enhance the Convention application, such as the previously mentioned CMS Small Grants Programme, or the two Trust Funds established to improve CMS implementation that are the Special Voluntary Trust Fund for Additional Voluntary Contributions in Support of Approved Activities under the CBD and the Special Voluntary Trust Fund to Facilitate the Participation of Parties in the Process of the CBD.

Given that this study focuses on Africa and Elephant Conservation, it is worth mentioning the African Elephant Fund and the previously mentioned African World Heritage Fund.

As it can be read on the Fund website, the former was established to help range States in fostering action to protect the Elephant Populations under threat[376]. It finances projects that have as objective the reduction of illegal killing of elephants and illegal trade in elephant products, maintaining elephant habitats and restore connectivity, reducing human-elephant conflict (HEC), increasing awareness on elephant conservation and management of key stakeholders that include policy makers and local communities, strengthen range states knowledge on African elephant management, strengthen cooperation and understanding among range states, improving local communities cooperation and collaboration on African Elephant Conservation and implementation of the African Elephant Action Plan[377]. Therefore it tackles all the implementation issues mentioned earlier.

On the other hand, the African World Heritage Fund finance projects that aim at the conservation and protection of the African's natural and cultural heritage to support the African States that ratified the 1972 UNESCO World Heritage Convention[378] in implementing its provisions. In addition the Fund, together with IUCN and the World Heritage Centre and other partners, developed the "African Nature Programme": "The overall objective of the Africa Nature Programme is to improve the management

[375] Redgwell C., "National Implementation", in Bodansky, D. Brunnée, J. & Hey, E. (eds.), "The Oxford Handbook of International Environmental Law", Oxford University Press, 2007.

[376] The African Elephant Fund, webpage accessible at: http://africanelephantfund.org/page/i/objectives-of-aeap - last accessed: 12/01/2020.

[377] Ibidem.

[378] African World Heritage Fund, webpage accessible at: https://whc.unesco.org/en/awhf - last accessed: 12/01/2020.

effectiveness of the natural World Heritage sites in Africa through targeted capacity building and knowledge sharing"[379].

There are also other institutions, such as the World Bank, that provide developing countries with funds. As it can be read on the World Bank website:

"The WBG has been the world's largest source of development finance for this sector. The overall WB biodiversity portfolio (IDA, IBRD and trust funds) of 245 projects in the ten years from FY2004 to FY2013 included direct biodiversity commitments worth over US$ 1 billion. These projects have taken place in 74 countries in all six of the WB's regions ranging from support to protected areas, institution building, integrating biodiversity conservation into production landscapes, designing sustainable financing schemes for conservation to promoting nature tourism and fighting wildlife crime or invasive alien species"[380]

As explained in the first chapter of this study, every analyzed Convention requires Contracting Parties to submit reports concerning the implementation of the Conventions at the national level and monitoring mechanisms and plans have been developed during the years to get more information about national implementation and effectiveness. However, it also emerged that, due to the lack of report submissions or the incompleteness of the information reported, is still hard to get a complete assessment of the extent of the domestic implementation and compliance.

In the following subparagraphs this dissertation will focus on four range States, namely Gabon and Democratic Republic of Congo for forest elephants and United Republic of Tanzania and Zimbabwe for savanna Elephants, describing the measures each of them took to implement and comply with the Conventions domestically and therefore which measures they took to protect the elephants in their territory.

[379] Programme document for the implementation of the African Nature Programme from 2014 to 2017 accessible at: https://whc.unesco.org/en/africa-nature/ - last accessed: 12/01/2020.

[380] The World Bank website, webpage accessible at: https://www.worldbank.org/en/results/2013/04/09/biodiversity-sector-results-profile - last accessed: 11/01/2020.

2 Conventions' national application in four African Range States

2.1 Gabon

- UNESCO World Heritage Convention: Gabon ratified the UNESCO World Heritage Convention on 30 December 1986.

  At the present time there is only one property inscribed on the World Heritage List, which is a mixed property (it meets both cultural and natural criteria to be inscribed): the Ecosystem and Relict Cultural Landscape of Lopé-Okanda[381]. Gabon prepared a tentative list that contains other 7 possible sites to be inscribed in the list.

  The inscribed property has been officially inscribed in 2007 and it meets criteria number iii, iv, ix and x of the Operational Guidelines for the Implementation of the World Heritage Convention[382]. It is a 491,291 ha area with a buffer zone[383] of 150,000 ha.

  For the purpose of this study, this area is important because it is home to a great number of threatened species of large mammals, including forest elephants. According to the official area website, Lopé registers the highest density of elephants in the African Forests[384].

  The national reports about implementation of the Convention are not available on the UNESCO website, however the World Heritage Committee published the results of the Second cycle of Periodic reporting in Africa as a continent, which results are derived from questionnaires that States Parties submitted. The Second cycle refers to the years 2008-2015. The Third cycle report, covering years 2018-2024, will be published in 2021 for the African Region.

  In the document it is reported that States Parties declare that they generally established norms to protect natural heritage, being them "intersecting and multi-sectoral and provide some

[381] UNESCO page about Ecosystem and Relict Cultural Landscape of Lopé-Okanda accessible at: https://whc.unesco.org/en/list/1147 - last accessed: 12/01/2020.
[382] World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019).
[383] As it can be read in the UNESCO Operational Guidelines at point 104, a buffer zone is an area surrounding the nominated property which has complementary legal and/or customary restrictions placed on its use and development in order to give an added layer of protection to the property.
[384] Lopé-Okanda official website, accessible at: https://www.pmlope.org/sur-le-terrain/ - last accessed: 12/01/2020.

level of protection for the variety of heritage"[385]. The national laws that Gabon implemented are listed in the Gabon page of the UNESCO website[386]. It is also stated that these instrument are generally inadequate or outdated, therefore regulations need to be updated and turned adequate to protect the natural sites from the new challenges. In addition, it is also reported that implementation and enforcement of these legal instruments is very limited[387].

The involvement of local communities and the private sector varies from country to country but it is reported to be low with repercussions for conservation, protection and management as well as to receive funding to preserve heritage properties[388].

Concerning inventories, lists, registers for natural heritage, it is reported that Gabon organizes regular updates of its national inventory[389].

As far as the effectiveness of these national measures are considered, the IUCN reported in a 2017 assessment report about all Natural World Heritage sites conservation status that the Ecosystem and Relict Cultural Landscape of Lopé-Okanda's conservation is good but with some concerns[390]. It can be therefore inferred that the national legislation to protect it can be considered generally efficient, even if improvements are needed.

A factor that heavily affects conservation efforts is illegal activities: in the UNESCO report it is stated that 30 out of the 32 natural properties in Africa are affected by this issue, and the other two declare the factor as a potential challenge[391]. Among the illegal activities, poaching is included, that, as explained in the previous chapter, is among the first factors that affect the conservation of elephants, both forest and savanna. Treasure hunting is also another factor affecting the conservation of the protected areas and its resources.

There are no specific information about Gabon's financial resources in either the UNESCO website nor the African World Heritage Fund. Searching in the international assistance

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385 UNESCO Report about the Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.

386 See the following link: https://whc.unesco.org/en/statesparties/ga/laws/.

387 Ibidem.

388 UNESCO Report concerning the Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.

389 Ibidem.

390 IUCN, World Heritage Outlook 2 – A conservation assessment of all natural World Heritage sites, 2017.

391 UNESCO Report about the Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.

webpage of the UNESCO Convention it seems that Gabon received 134,600 USD to finance seven projects to increase the site's protection[392]. However in the UNESCO report it is stated that for natural properties conservation international assistance is the main source of funding in the African continent, a source that is considered to be not sustainable in the long-term.

- Convention on International Trade in Endangered Species of wild flora and fauna (CITES): Gabon signed CITES in May 1989.

  In Gabon, the Ministry of Forestry, the Environment and Protection of Natural Resources is the country's body responsible for applying and subsequently monitoring the implementation of CITES recommendations. It does so through the Directorate of Fauna and Protected Areas (DGFAP) and the National Agency for National Parks (ANPN). In addition, law enforcement related to wildlife crime is carried by the *Brigade de lutte contre le braconnage*, an anti-poaching unit established in 2001[393]. Gabon is also supported by international NGOs like WWF and Conservation Justice (CJ) which provide technical support to enforce law[394].

  As mentioned in the first chapter when describing the Convention, the National Legislation Project requires States Parties to adopt at least the minimum national legislation to implement the Convention. In November 2019 it has been reported that Gabon is in category two[395], and under the column that reports progress it is stated that it committed to draft legislation, and that the next step is the finalization and submission of the revised legislation[396].

  Given that this study focuses on elephants, it is important to highlight that Gabon has also been inserted in category C of the CITES National Ivory Action Plans[397], which implies that

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[392] See https://whc.unesco.org/en/list/1147/assistance/ - last accessed: 13/01/2020.

[393] TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009, 2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf.

[394] Ibidem.

[395] Category two means that legislation is believed generally not to meet all of the requirements for the implementation of CITES .

[396] Status of legislative progress for implementing CITES (Updated on November 2019) available at: https://cites.org/legislation/National_Legislation_Project.

[397] CITES National Ivory Action Plans, as reported on the website, are a practical tool that is being used by the Convention in a number of its member States, identified as 'Category A Parties', 'Category B Parties' and 'Category C Parties', to strengthen their controls of the trade in ivory and ivory markets, and help combat the illegal trade in ivory. Each plan outlines the urgent measures that a CITES Party commits to deliver – including legislative, enforcement and public awareness actions as required – along with specified time frames and milestones for implementation. While the plans follow a common formula of actions, timeframes and milestones, each national ivory action plan is unique. A plan should identify the actions that are of highest priority for a particular Party to help combat the illegal ivory trade, depending upon the Party's own circumstances including its capacity-building needs, the extent of available resources, and the scale and nature of illegal trade and whether

Gabon is among the Parties of CITES affected by the illegal trade in Ivory, and therefore needs to establish an ad hoc plan to tackle it.

States involved in these National Ivory Action Plans submit progress reports, and Gabon in its 2015-2016 report stated that "Current legislation is not sufficiently adapted to the extent of growth in big-term poaching and the high volume of ivory trafficking. A reform of specific texts has proved to be necessary and will pursue the criminalization of connected wildlife offences"[398]. In the last report available about the National Ivory Action Plan, referring to the period 2017-2018, it is stated that the government is in the process of reinforcing sanctions for Ivory traffickers, reviewing the Penal Code and creating also a special prosecutor's office for environmental crimes[399]. It also states that they did partial progress in establishing national legislation to implement CITES, given that there is no specific legislation concerning CITES regulations, even though there is a revision of the Forests Code currently submitted at the legislative power. This last information is confirmed also by a 2017 TRAFFIC Report concerning Ivory Markets in Central Africa, which states that in Gabon wildlife is protected under Law No. 16/2001 of the Forest Code, however the code is under revision[400]. In this same TRAFFIC report concerning Government-held Ivory Stockpiles it is reported that the amount of declared worked ivory in 2004 is the same of the one declared in 2008 which according to Wildlife Conservation Society signals either a mistake or a possible corruption problem given that between 2004 and 2008 there have been regular seizures and storage of worked ivory from the city markets[401].

Among other measures and projects that are currently almost adopted and developed nationally there is the actual sanctions application given it is stated that eight ivory trafficking cases have been submitted to national courts, in particular two already closed and six waiting

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the Party is a source, transit or destination State for illegal ivory. The full information are available at the following page: https://www.cites.org/eng/niaps - last accessed: 14/01/2020.

[398] National Ivory Action Plan of Gabon 2015–2016 available at: https://cites.org/eng/prog/niaps/category_c_parties_progress_reports.

[399] National Ivory Action Plan of Gabon 2017–2018 available at: https://cites.org/eng/prog/niaps/category_c_parties_progress_reports.

[400] TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009, 2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf.

[401] Ibidem.

to be processed; they are also about to create an information exchange system at the local level as well as at the international level, signing collaboration protocols concerning ivory trafficking with in particular Cameroon, Congo, the Republic of Central Africa, and the Equatorial Guinea, aiming also at reinforcing the collaboration with organizations such as the INTERPOL, ETIS etc.

Importantly, Gabon is also working to reinforce the boarded patrol, mobilizing a hundred security agents, providing 1835 vehicles, a hundred and two tracks and eighty-two motorcycles.

On April 2017 it has been published in the Official Journal of the Gabon Republic the decree n°00111/PR/MEFPEPGE that established the *Agence National de la Préservation de la Nature*, among which aims it must take specific actions for contrast poaching and the illegal exploitation of biodiversity[402].

In addition to the National Ivory Action Plan, Gabon created, together with the other African Range States, the African Action Plan during the 14th meeting of the Conference of the Parties to CITES[403].

Currently, in Gabon there are two sites that are surveilled by MIKE[404].

There are no specific information about Gabon's financial resources to comply with CITES. However, the African Elephant Fund, linked to the African Action Plan, financed several projects to enhance law enforcement such as Military Training for Gabon's Park Rangers, Genetic Traceability Of Ivory For Law Enforcement In Gabon and Developing A Quadcopter And Infrared Camera System To Monitor And Track The African Forest Elephant[405].

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[402] Journal Officiel de la Republique Gabonaise n° 345.

[403] As it can be read in the African Elephant Action Plan text: "Following extensive consultation among all African elephant range States, the following eight (8) priority Objectives, cascaded into various Strategies and Activities, have been recognised and adopted as critical areas of focus for elephant conservation across Africa. Whilst all the Activities in this Action Plan are viewed as extremely important to ensure the long-term survival of wild elephants, the range States, recognising likely funding limitations, have prioritised these Objectives in the order of hierarchy. Therefore, Objective 1 (Reduce Illegal Killing of Elephants and Illegal Trade in Elephant Products) is accorded top priority while Objective 7 (Improved Local Communities Cooperation and Collaboration on African Elephant Conservation) is of least priority. Objective 8 (African Elephant Action Plan is effectively implemented) is an overarching operational objective of the Action Plan.

[404] See https://www.cites.org/eng/prog/mike/index.php#Site%20Selection – last accessed: 15/01/2020.

[405] See African Elephant Fund accessible at: http://www.africanelephantfund.org/page/i/summary-of-funded-projects - last accessed: 15/01/2020.

It seems that Gabon is making progress in applying the Convention and therefore protecting the elephant population in its territory.

- Convention on Migratory Species (CMS): Gabon ratified the Convention on August 2008.

  There is a lack of information concerning Gabon Convention application given Gabon never submitted any national report[406].

  The Convention has a National Legislation Programme[407] to help member States to comply with CMS obligations, in particular with article Article III.4 (a) and (b) and Article III.5 and in the Programme website National Legislation Inventories are published. Concerning Gabon, the inventory is empty.

  The lack of information makes it hard to assess the Convention application in Gabon, however it could indicate that Gabon is not implementing the Convention fully.

- Convention on Biological Diversity (CBD): Gabon ratified the Convention on the 12th of June 1997.

  Gabon submitted the latest national report on the 18th November 2019 reporting that the Country is taking measures to apply the Convention at the national level, such as the establishment of the Gabon's strategic investment fund, executing projects concerning the application of the environmental multilateral agreements like CITES, law n°016/01 of 2001 of the forestry code of the Gabon Republic, law n°003/2007 of 2007 concerning the national parcs and law n°007/2014 concerning the Protection of the Environment in Gabon[408]. In particular, to protect species and implement target 12 of the Aichi Biodiversity Targets, in the report it is stated that Gabon adopted the decree n°137/PR/MEFEPA of 2009 to protect endangered species. In addition, article 275 of the forestry code implies that those that commit criminal activities involving protected species can be punished with three to six months in prison as well as pay a fee between 100 000 to 10 000 000 Gabonese francs[409].

  In the report, the Country declares that the above mentioned measures are effective[410].

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406 CMS National Reports webpage accessible at: https://www.cms.int/en/documents/national-reports.

407 See https://www.cms.int/en/activities/national-legislation-programme - last accessed: 20/01/2020.

408 Gabon 6th CBD National Report accessible at: https://www.cbd.int/doc/nr/nr-06/ga-nr-06-fr.pdf.

409 Ibidem.

410 Gabon 6th CBD National Report accessible at: https://www.cbd.int/doc/nr/nr-06/ga-nr-06-fr.pdf.

However, in the National Agency for National Parks website it is reported that the legislations in place to manage the National Parks are still incomplete. Laws are currently being elaborated or are about to be adopted. It also states that the National Agency for National Parks in the meanwhile applies other Gabon laws that have as scope natural resources' conservation which are the Environment code, the Forests code and the Fishing and Mining code[411].

2.2 Democratic Republic of the Congo

- UNESCO World Heritage Convention: the Democratic Republic of the Congo (DRC) ratified the Convention on September 1974. At the present time, DRC has five sites inscribed in the World Heritage List. These properties are all natural site. It is important to highlight that at the present time, all these sites are inscribed on the List of World Heritage in Danger. DRC also has three sites inserted on its tentative list waiting to be analyzed and eventually inserted in the World Heritage List. The inserted properties are the Garamba National Park, the Kahuzi-Biega National Park, the Okapi Wildlife Reserve, the Salonga National Park and the Virunga National Park.

  As reported in the UNESCO report, Garamba National Park was inserted on the Danger List because of a drastic reduction in the population of the northern white rhinoceros; Virunga National Park, Kahuzi-Biega National Park and Okapi Wildlife Reserve were all inscribed because of insecurity concerns. Finally, Salonga National Park was inscribed because of poaching and illegal encroachments[412].

  All these parks contain significant populations of elephants, both forest and savanna elephants. In particular, Garamba National Park is a 490,000 ha property and is one of the very few places where both forest and savanna elephants can be observed.

[411] National Agency for National Parks (ANPN) official website accessible at: https://web.archive.org/web/20160918171645/http://www.parcsgabon.org/l-anpn/cadre-juridique-sectoriel - last accessed: 14/01/2020.

[412] UNESCO Report about the Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.

Kahuzi-Biega National Park is a 600,000 ha area, and it is one of the ecologically richest regions of Africa and worldwide.

The Okapi Wildlife reserve is a 1,372,625 ha property and it is home to the largest population of forest elephants still present in the eastern DRC[413].

Salonga National Park constitutes the largest tropical rainforest reserve in Africa and is home to populations of bush elephants.

Virunga National Park is a 790,000 ha area with an important concentration of wildlife species, including elephants.

What has been previously said about information availability in the Gabon paragraph applies also for DRC, given that national reports are not available. However checking the Parks' UNESCO pages it emerges that there are serious management limits. For example, in Garamba National Park there is the need to integrate local communities in the management of the Park, while Kahuzi-Biega National Park lament scarce resources to properly protect the species in the Park, together with logistical problems that caused scarce surveillance with the subsequent increasing of poaching. In addition, in this area there were political issues that challenged the integrity of the Park, with large mammals' populations declining dramatically[414]. Another issue is lack of financial resources, which undermines management. Similar issues are encountered also in the other three National Parks, recording poaching issues and lack of resources like qualified staff as well as funds.

It can be therefore inferred that due to these gaps Convention compliance is not effective in DRC at the present time.

- Convention on International Trade in Endangered Species of wild flora and fauna (CITES): the Democratic Republic of the Congo ratified the Convention on 18th October 1976.

  The *l'Institut Congolais pour la Conservation de la Nature (ICCN)* is the country's body responsible for applying and monitoring the implementation of CITES regulations.

[413] See Okapi Wildlife Reserve UNESCO webpage accessible at: https://whc.unesco.org/en/list/718 - last accessed: 13/01/2020.

[414] See Kahuzi-Biega National Park UNESCO webpage accessible at: https://whc.unesco.org/en/list/137 - last accessed: 13/01/2020.

Concerning the CITES National Implementation Project, in November 2019 it has been reported that DRC is in category one, which means that national legislation is believed generally to meet the requirements for implementation of CITES.

Like Gabon, DRC takes part of the National Ivory Action Plan, and it has been inserted in Category C, which implies the need to establish a plan to tackle poaching.

DRC submitted its first NIAP report in March 2015, however in its latest report available referring to the period 2018-2019 it is stated that DRC "the legislative and regulatory arsenal of the DRC is quite rich and makes it possible to fight against poaching and the illicit trafficking of wildlife and its products[415]". It mentions the legislations actually in place that are Law n°14/003 of 11 February 2014 on the conservation of nature, Law n°82/002 of 28 May 1982 on the regulation of hunting, Ministerial Order n°056/CAB/MIN/AFF-ECN/01/00 of 28 March 2000 on the regulation of international trade in endangered species of wild fauna and flora, Ministerial Order n°014/CAB/MIN/ENV/2004 of 29 April 2004 on the implementing measures of the above mentioned law regulating hunting, Decree n°021/CAB/MIN/EDD/AAN/WF/05/2017 of 31 August 2017 transferring the CITES Management Authority to the ICCN, which carries out operations against poaching through patrols in protected areas.

The last mentioned decree, among other measures, established a CITES National Committee in DRC to strengthen inter-institutional collaboration, with the main mission of fighting against illegal trafficking in wild specimens of fauna and flora in DRC[416].

The report mentions also the difficulties that they are facing in applying the above mentioned national law, stating that there are delays in the elaboration and implementation of law n° 14/003 as well as the need to update law n°82/002 concerning hunting.

Currently, there are six projects on the elaboration of texts to enhance the implementation of law n°14/003. In addition, the report adds that the before mentioned laws put in place a more repressive regime to protect species given that penalties include imprisonment to up to ten years as well as fines up to USD 100,000.

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[415] National Ivory Action Plan of the Democratic Republic of The Congo 2018–2019 available at: https://cites.org/eng/prog/niaps/category_c_parties_progress_reports.

[416] National Ivory Action Plan of the Democratic Republic of The Congo 2018–2019 available at: https://cites.org/eng/prog/niaps/category_c_parties_progress_reports.

Furthermore, DRC signed a collaboration protocol agreement with its management authority and border services (DGDA and OCC), to strengthen border control to fight illegal trade in wild species of fauna and flora that are listed in the CITES appendices[417].

The Democratic Republic of the Congo also takes part in the African Action Plan, established during the 14th meeting of the Conference of the Parties to CITES[418].

In addition, all five UNESCO protected sites are currently MIKE sites[419].

Given that DRC measures have been classified in category one of the National Implementation Project, and given the before mentioned measures and laws in place or in the process of becoming effective to protect species from poaching and illegal trade, it could be inferred that DRC is implementing the Convention, however its effectiveness will be further discussed looking at the situation of the population of Forest Elephants in its territory.

- Convention on Migratory Species (CMS): the Democratic Republic of the Congo ratified the Convention on September 1990.

  Since ratification, DRC submitted three national reports. The latest has been submitted in 2008.

  As mentioned before in the Gabon paragraph, CMS has a National Legislation Programme and in DRC National Legislation Inventory it is reported that the relevant legislation to implement articles III. 4 and III.5 of the Convention are Constitution of DRC of 18 February 2006; Ordinancenº 69-041 of 22 August 1982 on the conservation of nature; Law nº 011/2002 of 29 August on the Code of Forestry; Project of Law on the Environment[420].

  As it has been said in the first chapter of this dissertation, both forest and savanna elephants are inserted in Appendix II of the CMS, which requires Parties to conclude agreements with other range States. Given that the case study of this dissertation is the situation of the population of elephants, in the latest DRC National Report it is reported that DRC participated in the establishment of a Memoranda of Understanding concerning the African

[417] Ibidem.
[418] See note 311 above.
[419] See https://www.cites.org/eng/prog/mike/index.php#Site%20Selection – last accessed: 19/01/2020.
[420] Democratic Republic of the Congo National legislation inventory accessible at: https://www.cms.int/sites/default/files/document/Democratic%20Republic%20of%20the%20%20Congo_cms_nlpi.pdf.

Elephants in 2005, stating also that DRC has the intention to develop further agreements under the CMS concerning African Elephant (Loxodonta Africana).

However DRC did not submit further reports, therefore it is unknown whether they actually concluded further agreements as well as the one currently in place is actually effective.

- Convention on Biological Diversity (CBD): The Democratic Republic of the Congo ratified on the third of March 1995.

  DRC submitted the latest national report on October 2019 and the latest National Strategic plan on October 2016.

  In the National Strategic plan it is reported that the laws relevant to the protection of biodiversity are law n° 011/2002 of the Forestry Code, law n°11/009 concerning the fundamental principles of the protection of the environment, law n° 14/003 concerning the protection of nature, which also contains provisions concerning the trade in endangered species, and law n°82/002 regulating hunt[421]. However, it is also reported that some of these measures are ineffective or obsolete, thus they need to be replaced.

  The report states that the Forestry Code was being revised during the preparation of the 5th national report about the application of the CBD.

  In particular, concerning the protection of species under the CBD, DRC established as a national objective the maintenance of the populations of fauna and flora to be reached by 2020. In its 6th and latest national report it is reported that in the 5th report it has been declared that there was a loss in the elephants populations, given that the protected areas are mainly situated in the eastern part of the country, where conflicts were taking place, making conservation hard.

  Considering the above-mentioned information, the latest report reports that DRC is doing progress towards the achievement of the objective, even though these progresses are slow[422].

  It is stated that elephants are protected by the DRC laws: between 2014 and 2018 laws have been promulgated, sustaining that the juridical system protecting species has improved. However, the report also states that there is a lack of precise information concerning the

[421] Democratic Republic of the Congo National Biodiversity Strategies and Action Plan (NBSAPs) accessible at: https://www.cbd.int/doc/world/cd/cd-nbsap-v3-fr.pdf.

[422] Democratic Republic of the Congo 6th CBD National Report available at: https://www.cbd.int/doc/nr/nr-06/cd-nr-06-fr.pdf.

evolution of the populations of elephants therefore making it harder to evaluate the actual effectiveness of the measures applied[423].

2.3 United Republic of Tanzania

- UNESCO World Heritage Convention: the United Republic of Tanzania signed the Convention on August 1977.

  Of a total amount of seven sites inscribed in the List, three are natural sites and one is a mixed site. The sites are Kilimanjaro National Park, Selous Game Reserve, Serengeti National Park, and Ngorongoro Conservation area. Selous Game Reserve is inserted in the List of World Heritage in Danger since 2014. Tanzania prepared a tentative list to insert other five sites to the List.

  Kilimanjaro National Park is a 75,575 ha property. It was not inscribed because of its biodiversity, however its wildlife is still important, with populations of elephants living there. The park is protected under national legislation as a national park and there is a management plan.

  Selous Game Reserve is a 5,120,000 ha property. It is the only site in Tanzania inserted in the Danger List. In this area lives ones of the biggest populations of savanna elephants, amounting to 106,300[424] among other species. It is one of the biggest areas in Africa with a great amount of wilderness and almost pristine ecological and biological processes. In the Park page of the UNESCO website it is stated that the Park has appropriate legal protection and there is a management plan in place, however the area suffers from pressures such as exploration and extraction of minerals, oil and gas but especially from poaching of elephants and rhinos[425].

[423] Ibidem.
[424] See the Selous Game Reserve UNESCO webpage accessible at https://whc.unesco.org/en/list/199 - last accessed: 14/01/2020.
[425] See the Selous Game Reserve UNESCO webpage accessible at https://whc.unesco.org/en/list/199 - last accessed: 14/01/2020.

Serengeti National Park is a 1,476,300 ha area with a high level of biodiversity. In this area live various endangered species, among which savanna elephants (2,700 individuals)[426]. The management of the site is regulated by both international and national legislations. In particular, at the national level, it is regulated by the National Parks Ordinance Cap 412 in addition to the 1974 Tanzanian Wildlife Conservation Act and the 2009 Wildlife Conservation Act that guarantee protection to the site and the adjacent area. It also has a management plan in place. However, it is also stated that even though now resources may be sufficient, because of new pressures and challenges, they could soon become insufficient in the future. The challenges that need to be tackled are first of all poaching together with tourism pressure, and lack of resource monitoring[427].

According to the IUCN 2017 assessment report about all Natural World Heritage sites conservation status, from 2014 to 2017 this site improved its conservation status, classifying it from significant concern to good with some concerns[428].

The Ngorongoro Conservation area is a 809,440 ha site, adjacent to the previously mentioned Serengeti National Park. In this area there is a high concentration of endangered species, among which savanna elephants are included. The national law that regulates the Park is the Ngorongoro Conservation Area Ordinance of 1959. Even though hunting is forbidden, poaching of wildlife constitutes a great menace to the species conservation.

Besides Selous Game Reserve, the other sites seem to be sufficiently managed. This is also confirmed by the IUCN assessment report about all Natural World Heritage sites conservation status[429].

Tanzania received 1,318,556 USD from international assistance to finance seventy projects.

- Convention on International Trade in Endangered Species of wild flora and fauna (CITES):

  The United Republic of Tanzania ratified the CITES Convention on 27 February 1980.

  Concerning the CITES National Implementation Project, in November 2019 it has been reported that Tanzania is in category two, which means that legislation is believed generally

[426] See the Serengeti National Park UNESCO webpage accessible at: https://whc.unesco.org/en/list/156 - last accessed: 14/01/2020.
[427] Ibidem.
[428] IUCN, World Heritage Outlook 2 – A conservation assessment of all natural World Heritage sites, 2017.
[429] Ibidem.

not to meet all of the requirements for the implementation of CITES. In addition, as it can be read on the CITES Project website, the Republic of Tanzania has been indicated as a Party that requires the attention of the Standing Committee as a priority[430]. However, in the legislative status table available on the Project webpage it has been reported that the next steps for Tanzania include an agreement between Tanzania and the Secretariat on revised legislative analysis, with the possibility to be moved from category two to category one[431].

As it can read on the CITES National Ivory Action Plan webpage, the United Republic of Tanzania has been inserted in Category B, which identifies countries that are markedly affected by the illegal trade in Ivory[432] therefore a specific plan to tackle poaching would be need. However, Tanzania is currently not participating in NIAP Process.

From the official website of the Ministry of Natural Resources and Tourism of Tanzania it can be inferred that the national authority in charge of wildlife managing and the implementation of CITES is Tanzania Wildlife Management Authority[433] (TAWA).

The Authority is in charge of carrying out anti-poaching patrols in and outside game reserves and surveilled areas, with the aim of contrasting poaching and illegal wildlife trafficking[434]. In particular, TAWA is in charge of pursuing criminals that transit within national highways and at export points along highways and airports and seaports, checking permits to travel with wildlife products.

It is reported that since its creation until 2016, 69,278 Patrols man days were conducted either in and outside Game Reserves and Game Controlled Areas. As a result 1,563 poachers have been arrested[435]. The Agency also confiscated 90 pieces of elephant tusks weighting 376.33kg[436] and it has an Canine unit active at the Julius Nyerere International Airport and Dar es Salaam seaport[437].

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430 See CITES National Legislation Project webpage accessible at: https://cites.org/legislation/National_Legislation_Project - last accessed: 19/01/2020.

431 Legislative Status Table available at https://cites.org/legislation/National_Legislation_Project - last accessed: 19/01/2020.

432 CITES National Ivory Action Plans webpage accessible at: https://www.cites.org/eng/niaps – last accessed: 19/01/2020.

433 Tanzania Wildlife Management Authority webpage accessible at: https://www.tawa.go.tz/conservation/wildlife-protection/ - last accessed 19/01/2020.

434 Ibidem.

435 Ibidem.

436 Ibidem.

437 Ibidem.

The United Republic of Tanzania currently has five sites monitored by MIKE[438].

In addition the country takes part in the African Action Plan, established during the 14th meeting of the Conference of the Parties to CITES.

The fact that there is progress in the measures implementation, given that the Secretary is considering to move the Country from Category two to Category one of the National implementation project, is a positive sign that Tanzania is working to enhance the Convention's implementation, However, Tanzania has been classified in Category B of the National Ivory Action plan to which it does not adhere and this could raise awareness concerning the protection of the elephant population in its territory.

- Convention on Migratory Species (CMS): the United Republic of Tanzania ratified the Convention on July 1999. Since ratification, Tanzania submitted four national reports. The latest one has been submitted on November 2019.

  In the inventory concerning the CMS National Implementation Plan, it is reported that the relevant legislation to implement articles III.4 and III.5 are Environmental Act, Wildlife Conservation Act, Fisheries Act, Marine Parks & Reserves Act, The Forest Ordinance, The Tanzania National Parks Act CAP 283, The Ngorongoro Conservation Act CAP 284, The Land Act[439].

  In the latest available national report of 2019, it emerges that the United Republic of Tanzania did not sign any Memoranda of Understanding concerning Elephants, however it is stated that "The country committed to fulfilling and meeting Convention's obligations including payment of subscriptions to the Convention and its agreement, development and implementation of Species Action plans such as Elephant"[440]. It is also reported that the country has been doing wildlife monitoring census of large mammals like elephants.

  Concerning the threats and pressures affecting migratory species, including obstacles to migration, it is stated that illegal hunting affects elephants, however the impact it has on the species is reported to be low as well as legal hunting[441].

[438] See https://www.cites.org/eng/prog/mike/index.php#Site%20Selection – last accessed: 19/01/2020.
[439] United republic of Tanzania National legislation inventory accessible at: https://www.cms.int/en/activities/national-legislation-programme.
[440] United Republic of Tanzania CMS National Report available at: https://www.cms.int/sites/default/files/document/2019%20CMS%20National%20Report_Tanzania.pdf.
[441] Ibidem.

In the report it is stated that Tanzania created assessment to contribute to migratory species conservation through the establishment of wildlife corridors, dispersal areas, buffer zones and migratory routes that are important for key migratory species such as elephants[442].

- Convention on Biological Diversity (CBD): the United Republic of Tanzania ratified the Convention on Biological Diversity on the 6th of June 1996.

  Tanzania submitted the 6th National Report on may 2019 and the latest National Biodiversity Strategies and Action Plan on January 2016.

  In Tanzania's latest report it has been stated that the Country took various initiatives to protect biodiversity, among which there is the National Fisheries Policy of 2015, the National Environmental Policy, Forest Policy, Education and training Policy, National Water Policy and Land Policy[443]. The report further declares these measures to be partially effective because of a lack of cross-sectoral Policy planning. In addition, the Country also laments inadequate environmental information necessary to decision making[444].

  The report also mentions the Country's strategies to implement the Convention. Among these there are: the revised National Environmental Action Plan (NEAP), the revised National Strategy on urgent Actions for Conservation of Land and water Catchments and the revised National Strategy for Conservation of Marine coastal environment, Lakes, rivers and dams, Biosphere Reserve Strategy 2019, Agriculture Climate Resilience Plan 2014, Integrated Pest Management Plan 2014, Fisheries Sector Development Strategy 2018, Agricultural Sector Development Strategy 2016, Deep Sea Fishing Strategy 2015 and National Aquaculture Development Strategy 2018.

  In addition to these, what is relevant in particular for the protection of elephants, the case study of this dissertation, there is the National Anti-poaching Strategy 2014 and the Species Management Action Plan 2018[445]. The Country states that these measures are partially effective for the same reasons that have been previously mentioned together with lack of technology, inadequate financial resources and limited institutional capacity[446].

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[442] Ibidem.
[443] United Republic of Tanzania 6th CBD National Report accessible at: https://chm.cbd.int/database/record?documentID=245938.
[444] Ibidem.
[445] Ibidem.
[446] Ibidem.

Another relevant measure to protect elephants mentioned in the report is the establishment of a Memorandum of Understanding (MoU) signed between Mozambique and Tanzania as well as a MoU signed between Tanzania and Kenya on cross-border wildlife security[447]. In particular, elephants migrate from Selous Game Reserve in Tanzania to Niassa in Mozambique, therefore these corridors have been classified as game reserves. However, it is also reported that these measures are partially effective because of a lack of harmonization of policies and laws concerning trans-boundary biodiversity resources as well as lack of human and financial resources and infrastructure[448]. In addition, there is also a lack of involvement of local communities[449].

2.4 Zimbabwe

- UNESCO World Heritage Convention: Zimbabwe ratified the UNESCO Convention on August 1982. Of five inscribed sites in the List, two are natural sites. The sites are Mana Pools National Park, Sapi and Chewore Safari Areas and Mosi-oa-Tunya/Victoria Falls. Zimbabwe prepared a Tentative List to inscribe two more sites.

  Of these two areas previously mentioned, the first one is a 676,600 ha property in total constituted by three different but contiguous protected areas: the Mana Pools National Park (219,600 ha), Sapi Safari Area (118,000 ha) and Chewore Safari Area (339,000 ha). This ensemble of protected areas is home to a big concentration of wild animals, including savanna elephants[450].

  The Lower Zambezi Valley Parks and Wildlife Area Policy and the Zimbabwe Parks and Wildlife Act Cap 20: 14 of 2008 constitute the legislations that regulate the site and provide it with resources. Even if monitoring systems and programs to maintain it in its natural status

[447] United Republic of Tanzania 6th CBD National Report accessible at: https://chm.cbd.int/database/record?documentID=245938.
[448] Ibidem.
[449] Ibidem.
[450] See Mana Pools National Park, Sapi and Chewore Safari Areas UNESCO webpage accessible at: https://whc.unesco.org/en/list/302 - last accessed 14/01/2020.

are in place, the property needs a World Heritage Property Integrated Management Plan to protect the areas and wildlife from threats such as poaching.

Even if the Mana Pools National Park, Sapi and Chewore Safari Areas is not inserted in the Danger List, the IUCN conservation report classifies it as a site whose conservation status is of significant concern[451].

It can be inferred that the Convention is partially effectively applied.

- Convention on International Trade in Endangered Species of wild flora and fauna (CITES): Zimbabwe ratified the Convention in 17/08/1981.

  Concerning CITES National Legislation Project, Zimbabwe has been inserted in Category one, which means that the legislation in place in the country is believed to generally meet the requirements for implementation in CITES.

  As it can read on the CITES National Ivory Action Plan webpage, Zimbabwe has been inserted in Category C, which identifies Parties affected by the illegal trade in ivory[452] therefore a specific plan to tackle poaching would be need. However, Zimbabwe is currently not participating in NIAP Process.

  The national authority that is in charge of implementing the Convention is the Zimbabwe Parks and Wildlife Management Authority[453]. It is stated that the Authority has a mandate to manage the entire wildlife population of Zimbabwe, whether on private or communal lands[454]. In particular, in Zimbabwe CITES permits are granted by the Head Office, Bulawayo Regional Office and Victoria Falls Town Office while ZimParks has a dual function under CITES as the Management and Scientific Authority[455].

  Currently Zimbabwe has three MIKE sites[456].

  In addition, the country takes part in the African Action Plan, established during the 14th meeting of the Conference of the Parties to CITES.

[451] IUCN, World Heritage Outlook 2 – A conservation assessment of all natural World Heritage sites, 2017.
[452] CITES National Ivory Action Plans webpage accessible at: https://www.cites.org/eng/niaps – last accessed: 20/01/2020.
[453] See https://zimparks.org/conservation/kavango-zambezi-golf-tournament/ - last accessed: 20/01/2020.
[454] Ibidem.
[455] Ibidem.
[456] See https://www.cites.org/eng/prog/mike/index.php#Site%20Selection – last accessed: 20/01/2020.

Given that Zimbabwe has been inserted in Category one of the National Legislation Project, it can be inferred that Zimbabwe is applying the Convention. However, there is shortage of information concerning law-enforcement efforts in the State Protected areas[457].

- Convention on Migratory Species (CMS): Zimbabwe ratified the Convention on June 2012. Since ratification, Zimbabwe published two national reports.

  In the inventory concerning the CMS National Implementation Plan, it is reported that the relevant legislation to implement articles III.4 and III.5 are Parks and Wildlife Management Act [Cap. 20:04], Environmental Management Act [Cap.20:27] and Forestry Act [Cap.19:04][458].

  According to Zimbabwe latest report of 2019, Zimbabwe do not participate in any Memoranda of Understanding concerning African Elephants[459].

  About threats affecting migratory species, it is reported that Elephants are affected by legal hunting, but in a low percentage[460].

  Furthermore, concerning the status of migratory species, it is reported that the population of African elephant is stable in the territory or either increasing as well. This is the result of Aerial Survey Reports.

- Convention on Biological Diversity (CBD): Zimbabwe ratified the Convention on Biological Diversity on November 1994.

  Zimbabwe submitted its 6th National Report and its National Biodiversity Strategies and Action plan which has been revised and adopted in 2014.

  To protect Biodiversity from threats, Zimbabwe has created a network of protected areas as well as implemented strict conservation and preservation legislation, also to regulate the sustainable use of some areas[461]. The protected areas constitute 27.2% of the country's land

[457] Gandiwa E. et Al., "Illegal hunting and law enforcement during a period of economic decline in Zimbabwe: A case study of northern Gonarezhou National Park and adjacent areas", Journal for Nature Conservation, vol 21, 2013.
[458] Zimbabwe National legislation inventory accessible at: https://www.cms.int/sites/default/files/document/Zimbabwe_cms_nlpi.pdf .
[459] Zimbabwe CMS National Report available at: https://www.cms.int/en/document/zimbabwe-national-report-cop13.
[460] Ibidem.
[461] Zimbabwe 6th CBD National Report available at: https://www.cbd.int/doc/nr/nr-06/zw-nr-06-en.pdf.

which positions Zimbabwe among the top 50 countries globally with the highest percentage of protected areas[462].

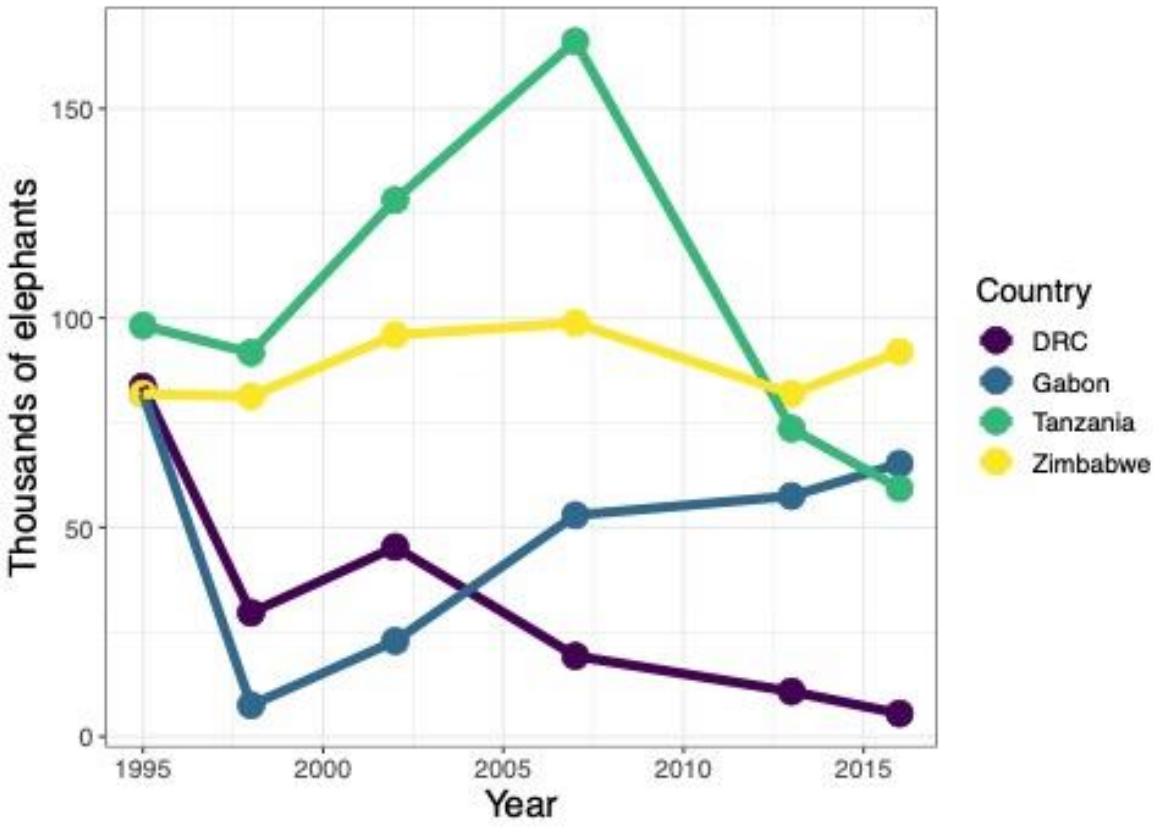
Regionally, the Country signed the SADC Protocol on Wildlife Conservation and Law Enforcement, which aim is that of setting a common framework for conservation and sustainable use of wildlife in the region. The protocol serves the purpose of encouraging member States to establish together legal measures to promote conservation and sustainable wildlife practices and to collaborate to achieve in an harmonized way the goals of the international agreements[463].

Zimbabwe also created together with neighboring countries two transfrontier conservation areas[464].

As far as species protection is concerned, the report states that there are species-specific conservation plans, including one for the elephants[465]. To this respect it is stated that the measures taken managed to reverse the decline in endangered species, among which the elephants, which are increasing[466].

[462] Zimbabwe 6th CBD National Report available at: https://www.cbd.int/doc/nr/nr-06/zw-nr-06-en.pdf.
[463] Ibidem.
[464] Ibidem.
[465] Ibidem.
[466] Ibidem.

3 Elephant Conservation in Four African Range States: a data review



The above graph displays the trend of African Elephants population in the four selected African Range States from 1995 to 2016. The data were collected by governments, conservation agencies and researchers and subsequently stored in the African Elephant Database, which is managed by the African Elephant Specialist Group (AfESG) and is available online for consultation[467].

These Countries have been selected in particular for their elephant populations: Gabon and DRC, because of the characteristics of their territory, are home to forest elephants. In addition, they were chosen to assess the effectiveness of conservation measures given that Gabon has growing population numbers while DRC decreasing populations.

[467] African Elephant Database accessible at: http://africanelephantdatabase.org/

On the other hand, Zimbabwe and Tanzania are home to savanna elephants: Zimbabwe has a growing population, while Tanzania has a decreasing population.

Starting with Gabon, it is a Central Africa Range State and the majority of its territory is forested, therefore it is home to forest elephants. In 1995 the population was around 61,794 individuals[468], however, as it can be seen in the graph, in 1998 the population plummeted due to an increase in poaching, habitat destruction due to logging and illegal hunting both outside and inside protected areas[469]. However, during the beginning of 2000 there was a slight increase in the population: this is because logging was not followed by permanent settlement or agriculture as well as because there was an increase in the prevalence of secondary forests that led to a quality improvement of elephant habitat[470]. In addition, because of dangerous practices of logging companies, Gabon introduced a new Forestry Code as well as introduced a National Environmental Action Plan[471] which could have contributed to the population increase. Even more importantly, as mentioned before, in 2002 through Presidential decree Thirteen National Parks were established[472]. However, in these years too poaching continued to be an issue, especially along the borders with Equatorial Guinea, Cameroon and Congo[473]. From 2002, as it can be seen from the graph, the population continued to grow until 2016, which could indicate that the measures taken in the Country to protect the species and implement the Convention are actually effective.

The Democratic Republic of the Congo, like Gabon, is a Central Africa range State and is another mainly forested Country in Central Africa, therefore home to forest elephants like Gabon. In the 1995 IUCN report based on data derived from the African Elephant Database, it is stated that forest elephant population was divided into four sub-populations and that the population is lower in southern Congo probably because of high human density and also because of high exploitation of the forest resources[474]. In 1995, the initial population was constituted by 65,974 individuals, however in 1998 the population plummet due to the civil

[468] IUCN African Elephant Status Report 1995.
[469] IUCN African Elephant Status Report 1998.
[470] IUCN African Elephant Status Report 2002.
[471] Ibidem.
[472] Ibidem.
[473] Ibidem.
[474] IUCN African Elephant Status Report 1995.

that started in 1997[475], which also caused a huge decrease in available resources for conservation as well as forced ICCN to abandon entire protected areas[476].

In the 2002 IUCN report, probably because of new surveys, an increase in elephant population has been recorded, even though it has been reported that due to lack of resources, absence of infrastructure, unregulated mining and especially poaching elephant conservation could be hard to pursue. In fact, as it can be observed from the graph, even after the civil war ended, the before mentioned threats continued leading to a huge loss in elephant populations, even in protected areas[477] (all the UNESCO sites in DRC are currently inserted in the Danger List).

As it has been mentioned earlier, DRC was required to produce a National Ivory Action Plan given its involvement in illegal ivory trade: in the 2016 IUCN report it is reported that of 27 planned activities, 15 are in progress[478]. Therefore, it could be inferred that currently the measures taken are not effective enough, even though progress has been made. However, the results of these implemented measures will be visible in the reports that will be published in the following years.

Tanzania is a Eastern Africa range State and is home to one of the biggest populations of elephants in whole Africa. In particular, it is home to savanna Elephants. In the 1995 IUCN report it is reported that Tanzania experienced, because of poaching, elephant losses in the 1970s and 1980s. However its population remained consistent: in 1995 the elephant population in Tanzania counted 73,459 individuals which remained relatively stable in in the next years. Importantly, the 1998 IUCN report reports that during that year it has been introduced a new national wildlife policy, focused on ecological needs of species. In addition, it offers higher protection to migratory routes and corridors[479].

Compared to 1998, in the 2000s it can be observed an increase in elephant population in the country. However, the IUCN 2002 report states that this increment cannot be explained only

[475] IUCN African Elephant Status Report 1998.
[476] IUCN African Elephant Status Report 2016.
[477] IUCN African Elephant Status Report 2016.
[478] Ibidem.
[479] IUCN African Elephant Status Report 1998.

through breeding; it is actually due to immigration of elephants from neighboring countries[480].

In the 2007 IUCN report it emerges that new counts revealed an increase in the elephant population as it can be observed in the graph, even though some areas remain unstudied[481].

In the following years there has been a huge decrease in the population of elephants, to the point that it is reported that from the 2007 report Tanzania lost the majority of its estimated elephant population in the last ten years, losing more than 90,000 elephants[482]. Tanzania was then forced to establish a national strategy to alt poaching and wildlife trade in 2014 with significant successes[483]. However, ETIS in 2015 reported that Tanzania was heavily involved in illegal ivory trade, as stated in the IUCN 2016 report, led CITES Standing Committee to ask Tanzania to prepare a National Ivory Action Plan. However, in the CITES National Ivory Action Plan it is reported that Tanzania is not currently participating in any plan. The information available are thus misleading.

Last, Zimbabwe is located in Southern Africa and, as it can be observed from the graph, is the country with the most stable population across the years. Zimbabwe is also home to a large population of savanna elephants, which is reported to be stable if not growing in all the reports from 1995 to 2016, as observable from the graph[484].

[480] IUCN African Elephant Status Report 2002.
[481] IUCN African Elephant Status Report 2007.
[482] IUCN African Elephant Status Report 2016.
[483] Ibidem.
[484] Chase J. M et Al., "Continent-wide survey reveals massive decline in African savannah elephants", PeerJ, 2016.

CONCLUSIONS

In this study four of the most important biodiversity-related Conventions have been described and analyzed, with the scope to assess their efficacy through the analysis of the trend of the population of African elephants in four African range States. All the selected States are contracting parties of all the examined Conventions. The countries analyzed are Gabon, Democratic Republic of the Congo (from now on DRC), the United Republic of Tanzania and Zimbabwe. In particular, Gabon and DRC have been chosen because they host big populations of forest elephants: in the first country the population is increasing, while in the second one it is decreasing. On the other hand, the United Republic of Tanzania and Zimbabwe are among the countries with the biggest savanna elephants population, having Tanzania a declining population while Zimbabwe record an increasing population.

The reason why this study selected four countries with increasing and decreasing populations is because the initial guess was that countries with increasing populations were effectively complying with the Conventions measures, while the countries with decreasing populations were having some difficulties in implementing adequate measures.

Furthermore, this study focused on elephants as a case study given that this species is protected under all the analyzed Conventions, being it highly endangered because of multiple factors such as poaching, habitat alteration, human population growth that could lead to human-elephant conflict, poverty and national development needs. In addition, they play a key role in maintaining the environment, being them important seed dispersal as well as a migratory species.

Considering the research results, it emerged that all these countries varied considering Conventions' implementation, but it also emerged that all Countries are doing relevant efforts to enforce wildlife laws, although with different efficiency results.

In particular, Gabon has increasing population of forest elephants and looking at the implementation of the Conventions Gabon seems to be doing some progress in applying the Convention on International Trade in Endangered Species of wild fauna and flora (from now on CITES), the UNESCO World Heritage Convention and the Convention on Biological

Diversity (from now on CBD). For instance, it is reported that a specialized unit, ANPN[485], has been established in Gabon to increase wildlife laws' implementation[486]. However, about the Convention on Migratory Species (from now on CMS), almost no information is available about Gabon implementation of the Convention, therefore it is not possible to state whether its measures are influencing either positively or negatively Gabon's elephant population.

In the DRC forest elephants are declining, and protected areas under UNESCO are all inserted in the danger list. However, it seems that the Country is doing good efforts in implementing the other Conventions and protect species, including elephants given that, for instance, DRC has been inserted in category one of the CITES National Implementation Project, which means that national legislation is believed generally to meet the requirements for implementation of CITES.

Tanzania too has decreasing savanna elephant populations being poaching the main loss cause, to the point that CITES required the Country to create and Ivory Action Plan to which Tanzania did not adhere. In fact, in the latest IUCN report it is stated that Tanzania is heavily involved in the illegal ivory trade[487]. Nevertheless, there are positive signs given that CITES Secretariat is considering moving Tanzania from category two to category one of the CITES National Implementation Project and also the Country improved the conservation of one of its UNESCO sites.

Zimbabwe has an increasing population of savanna elephants, with an appropriate management of UNESCO sites (besides one). It also records an effective implementation of CITES given it has been inserted in category one of the National Implementation Project and is also doing efforts to implement the other two analyzed Conventions. In addition, in the latest CITES Conference of the Parties proposal for amendment of Appendix I or II submitted by Botswana, Namibia, South Africa and Zimbabwe it is reported that Zimbabwe has an up to date elephant management plan[488].

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[485] Agence Nationale des Parcs Nationaux du Gabon.

[486] TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009, 2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf.

[487] IUCN African Elephant Status Report 2016.

[488] Convention on International Trade in Endangered Species of wild flora and fauna (CITES) CoP18, Proposal for amendment of Appendix I or II, 3 June 2019, available at https://cites.org/eng/cop/18/prop/index.php.

After carrying out in-depth research through the analysis of the Conventions' compliance requirements as well as the latest Conventions' and Organizations' reports, it emerged that what undermines compliance it is not lack of implementation given that, as showed in chapter three and summarized above, all these Countries are working to implement measures to protect elephants; the problem is rather lack of law-enforcement, coupled by scarce or lack of funding and corruption. In addition, there could also be the presence of factors influencing the population of elephants that are not a direct consequence of Conventions' implementation and compliance. An example of this latest sentence could be civil war in DRC.

As far as law-enforcement is concerned, for example, from the TRAFFIC report concerning ivory markets in Central Africa it emerged that the application of wildlife laws in Gabon apparently slowed down or even stopped the ivory trade[489].

On the other hand, in DRC, even if "today, national legislation governing wildlife protection and trade is rather comprehensive and attendant penalties for violations generally serve as a deterrent […] and these penalties constitute some of the highest in Central Africa"[490], effective application is still not achieved given that the ivory market in Kinshasa still remains one of the biggest in the region[491].

Lack of law-enforcement is often exacerbated by funding issues, that are frequently reported to be insufficient in all the analyzed Countries and across the different Conventions: for instance, according to the results of the second cycle periodic reporting of UNESCO about the protected sites "most properties report insufficient funding and human resources. There is an improvement in ensuring minimal funding for administration and human resource purposes, but conservation activities still lack the necessary funding. […] there is a strong reliance on international funding in the properties' day to day conservation budgets, which in particular presents a challenge in the natural properties"[492].

[489] TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009, 2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf.

[490] Ibidem.

[491] Ibidem.

[492] UNESCO Report about the Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/.

The funding problem is also recorded in the previously mentioned CITES proposal for amendment, where member States lament that the majority of the African conservation agencies struggle to fund conservation[493]. It further continues stating that the African Elephant Action Plan (AEAP) implementation has been slow due to low funding[494], even if the African Elephant Fund was created to enhance its implementation.

In fact, studies revealed that where efforts devoted to enforcement such as lowering investment in equipment and training or reducing patrolling efforts, poaching increases[495].

Another factor that negatively influences the effectiveness of the measures taken to comply with the Conventions is corruption: according to the Corruption Perception Index of the Organization Transparency International, all the four analyzed range States are positioned very low in the list being Gabon, DRC, Tanzania and Zimbabwe positioned respectively 130, 168, 98 and 158 out of 180[496].

Corruption influences negatively law-enforcement given that it favors illegal activities concerning ivory trade, creating incentives to continue it. In fact, it is reported that wealthy and/or powerful individuals, including government and military members, incite elephant poaching, providing poachers with money and weapons in return for tusks[497].

The involvement of powerful individuals is also mentioned in the TRAFFIC report about Ivory markets, where for example it is reported that in DRC agents of the Ministry of Waters and Forest could provide raw ivory for the right price to interested businessmen and individuals[498].

Given these highlighted issues, the scope of this study was that of suggesting and discussing possible solutions and actions to take in order to enhance law-enforcement and by consequence the protection of Elephants.

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493 Convention on International Trade in Endangered Species of wild flora and fauna (CITES) CoP18, Proposal for amendment of Appendix I or II, 3 June 2019, available at https://cites.org/eng/cop/18/prop/index.php.

494 Ibidem.

495 IUCN Report, Elephant meat trade in Central Africa, 2011. Available at: https://portals.iucn.org/library/sites/library/files/documents/SSC-OP-045.pdf.

496 Corruption Perception Index 2019 accessible at the following website: https://www.transparency.org/cpi2019 - last accessed: 31/01/2020.

497 Ibidem.

498 TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009, 2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf.

Through research some valuable solutions emerged to tackle the obstacles to conserve the population of elephants.

To enhance law-enforcement, first it is fundamental to monitor the results with up-to-date data that will inform further action.

In a manual dedicated to the study of elephants entitled *Studying Elephants* it is explained that it is fundamental to have trained law-enforcement units, where who has more expertise supports new staff that collects data, taking appropriate notes of the information collected[499]. Another vital component of monitoring is then receiving feedback on the data collected following a careful analysis[500].

The study also underlines the importance of two elements: first the need to have standardized categories for data, such as "sightings of live animals, finds of carcasses, encounters with illegal entrants and hunters or signs of their activity, the numbers of illegal hunters captured or seizures of illegal ivory made in terms of numbers and weight of tusks"[501]. Secondly, measure these categories against a measure of law-enforcement effort: for example in protected areas the effort could be measured in area and time units[502].

Another suggested way of collecting useful data is through DNA analysis to identify the source of ivory: Professor Samuel Wasser from the University of Washington in his study suggests that to enhance law-enforcement and stop poaching, a solution could be that of doing DNA analysis of wildlife products, which the author believes would provide authorities with further support in fighting poaching at its source: "Identifying the origin of poached products additionally forces countries to take responsibility for the illegal killing of their wildlife by ex posing them to CITES and other internationally enforced sanctions"[503].The author further sustains that fighting poaching at its source would prevent the killing of other individuals[504].

A successful example of increased elephant conservation through an increase of law-enforcement and a decrease in corruption is constituted by Ghana, where markets' raids acted

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499 Kangwana K., "Studying Elephants", African Wildlife Foundation, Nairobi, Kenya, 1996.
500 Ibidem.
501 Ibidem.
502 Ibidem.
503 Wasser S. K. et Al, "Combating the Illegal Trade in African Elephant Ivory with DNA Forensics", Conservation Biology, Vol 22, No 4, 2008.
504 Ibidem.

as a deterrent to the selling of illegal ivory[505]: it is reported that since 2008, when a raid on the shops in the Arts Centre was carried out by authorities, it acted as a deterrent for this illegal activity and also that "since the mid-1990s, with the successful implementation of multi-party elections, a freer press and less corruption, governance in Ghana has greatly improved. Thus, the vendors of ivory objects fear the authorities and consequently do not want to sell ivory items"[506]. In addition, this kind of actions by government authorities are much more cheaper and easy to manage compared to running anti-poaching units[507], given that products would be easier to identify. These actions lead to a reduction in ivory's demand, which reduces as a consequence elephant poaching and the author further sustains that also the other range States should improve their law enforcement strategies.

Another fundamental way of enhancing law-enforcement and curb corruption that has been repeatedly mentioned throughout this dissertation is the involvement of local communities: it has been reported that because of poverty many people hunt elephants and sell their products[508], considering also that elephants can create economic problems to local communities due to the fact that they ca destroy crops. As already mentioned, this can create frustration and anger in local communities, that have no incentive to protect the species, exacerbating the illegal killings. However, a successful example of community's involvement to the benefit of both people and conservation is constituted by the Amboseli National Park, where for example an annual fee was paid to the communities surrounding the protected area to support the migratory populations of elephants[509]. In addition to that, local communities set up accommodations for tourists through which they derived further resources and benefits, having this way an incentive to support the conservation of the area and of elephants inhabiting it[510].

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[505] Martin E., "Effective law enforcement in Ghana reduces elephant poaching and illegal ivory trade", Pachyderm, No 48, 2010.
[506] Martin E., "Effective law enforcement in Ghana reduces elephant poaching and illegal ivory trade", Pachyderm, No 48, 2010.
[507] Ibidem.
[508] IUCN Report, Elephant meat trade in Central Africa, 2011. Available at: https://portals.iucn.org/library/sites/library/files/documents/SSC-OP-045.pdf.
[509] Western D. et Al, "Finding space for wildlife beyond national parks and reducing conflict through community-based conservation: the Kenya experience", PARKS, vol 21.1, 2015.
[510] Ibidem.

In addition, fundamental is also the involvement of local and international NGOs: in the first chapter of this study it has been highlighted how some of the analyzed instruments were not particularly welcoming of NGOs, to the detriment of conservation. However, NGOs have proven to be fundamental to enhance law-enforcement: it has been reported that NGOs have supported the local governments in enhancing national law enforcement against wildlife crime[511]: for instance, in Gabon, Conservation Justice played a pivotal role in the promotion of enforcement action against ivory trade[512]. This is because through NGOs more resources are available, both in terms of finance and human resources, but also knowledge-sharing in terms of monitoring and management proven to be a key element. The importance of NGOs support emerges especially when this collaboration is missing: in DRC "there has not been a long enough, focused initiative or a strong enough non-governmental organizational presence focused on the subject to support ongoing law enforcement action against wildlife crime"[513]. Even if the Kinshasa market situation is well known and recognized as an issue, all the actions taken so far have been reported to be sporadic rather than continuous and carefully planned[514].

Through the years it has been proposed to allow the selling of the ivory obtained through routine conservation management to fund conservation and to implement "national elephant management plans and anti-poaching strategies as well as supporting community-based initiatives for securing elephant habitat, dispersal areas and movement corridors"[515]. This is what Botswana, Namibia, South Africa and Zimbabwe proposed at the CITES eighteenth meeting of the Conference of the Parties. The range States proposed this solution, which implies moving Elephants from CITES Appendix I to Appendix II given that their elephant population is either stable or growing, with, among other management issues, a subsequent

[511] TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009, 2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf.
[512] Ibidem.
[513] Ibidem.
[514] Ibidem.
[515] Convention on International Trade in Endangered Species of wild flora and fauna (CITES) CoP18, Proposal for amendment of Appendix I or II, 3 June 2019, available at https://cites.org/eng/cop/18/prop/index.php.

increase in human-elephant conflict[516]. They further sustain that there is no scientific evidence that a ban in ivory trade leads to population recovery[517].

However, ecologists do not agree with this proposal sustaining that Elephants should be absolutely listed on CITES Appendix I as well as that they should be recognized as Critically Endangered under the IUCN Red List[518].

A possible solution could be that of providing funds according to success of the implementation: this way an incentive is provided both to use funding appropriately and at the same time to work more in order to receive more funding.

These are all possibilities, however it is hard to find a unique solution for all range States given that, as it emerged through the CoP proposal, every range State has a different situation and different resources.

However, in general terms it can be affirmed that having a common legal framework is fundamental but it must be coupled with a strong fight to corruption and more funding available to range States to increase law-enforcement because, as highlighted by this study, laws have been created and range States are working to make them effective but they definitively need more support, both financially and technologically to properly enforce them.

To conclude, while carrying out research on this topic, it appeared clear how hard it is in the international community to find a common ground and try to satisfy every Country's needs, leading to unsatisfaction and subsequently to failure in meeting targets. However, I strongly believe that, especially in tackling issues like environmental ones that involve all Nations, it is of fundamental importance to continue to work to improve cooperation, sustaining each other and aim at the final goal instead of focusing on political or economic interests.

[516] Ibidem.
[517] Ibidem.
[518] Poulsen J. R. at Al, "Poaching empties critical Central African wilderness of forest elephants", Current Biology, vol 27, 2017.

BIBLIOGRAPHY

- Adams R., “Elephant treaties: The colonial legacy of the biodiversity crisis”, Hanover and London, 2004, pp 11
- Agence Nationale des Parcs Nationaux Report, Wildlife and poaching assessment in Northeast Gabon, 2013
- Baakman K., “Testing times: the effectiveness of five international biodiversity-related Conventions”, The Netherlands, Wolf Legal Publishers, 2011
- Bell G. and Collins S., “Adaptation, Extinction and Global Change”, Evolutionary Application, 2008
- Bennet A. F. and Saunders A. D., “Habitat fragmentation and landscape change”, in Navjot S., Ehrlich R. (eds) “Conservation Biology for all”, Oxford, 2010
- Bern Convention on the Conservation of European Wildlife and Natural habitats, 1979
- Beaune D. et Al, “Doom of the elephant-dependent trees in a Congo tropical forest”, Forest ecology and Management, 2012
- Beaune D. et Al, “Seed dispersal strategies and the threat of defaunation in a Congo forest”, Biodiversity Conservation, 2013
- Beaudrot L. et Al., “Standardized Assessment of Biodiversity Trends in Tropical Forest Protected Areas: The End Is Not in Sight”, Plos biology, 2016
- Blake S., “Sinking the Flagship: The case of Forest Elephants in Asia and Africa”, Conservation Biology, Vol 18, No 5, 2004
- Blake S. et Al., “Forest Elephants: the Planters of the Congo”, Biotropica, 2009
- Bodansky, D. Brunnée, J. & Hey, E., “The Oxford Handbook of International Environmental Law”, Oxford University Press, 2007
- Bouche’ P., “Will Elephants soon disappear from West African Savannahs?”, PLOSone, Vol 6, Issue 6, 2011
- Bowman M., Redgwell C., “Introduction”, in Bowman M., Redgwell C. (eds) “International Law and the Conservation of Biological Diversity” London, 1996

- Breuer T. et Al., “The consequences of poaching and anthropogenic change for forest elephants”, Conservation Biology, Vol 30, No 5, 2016
- Broom D. M., “International Animal Welfare Perspectives, including whaling and inhumane seal killing as a W.T.O. Public Morality issue” in Cao D. and White S. (eds), Animal law and welfare, international perspectives, 2016
- Broom D. M., “Considering animals’ feelings”, Animal Sentience, 2016
- Burn R. W. et Al., “Global Trends and Factors Associated with the Illegal Killing of Elephants: A Hierarchical Bayesian Analysis of Carcass Encounter Data”, PLOSone, Vol 6, Issue 9, 2011
- Campos – Arceiz A. et Al., “Megagardeners of the forest – the role of elephants in seed dispersal”, Acta Oecologica, 2011
- Cardinale BJ, Wright JP, Cadotte MW, Carroll IT, Hector A, Srivastava DS, et al., “Impacts of plant diversity on biomass production increase through time because of species complementarity” Proc Natl Acad Sci U S A. 2007 in Sonja Knapp “The link between diversity, ecosystem functions , and ecosystem services”, Springer International Publishing, 2019
- Carreau, D. & Marrella, F. (2016). Diritto Internazionale. Milano: Giuffè Editore
- Caughlin T. T. et Al., “Loss of animal seed dispersal increases extinction risk in a tropical tree species due to pervasive negative density dependence across life stages”, The Royal Society Publishing, 2014
- Ceballos G. et Al, “Biological annihilation via the ongoing sixth mass extinction signalled by vertebrate population losses and declines”, PNAS, 2017
- Chase J. M et Al., “Continent-wide survey reveals massive decline in African savannah elephants”, PeerJ, 2016
- Chapman L. J., “Balanites wilsoniana: elephant dependent dispersal?”, Journal of Tropical Ecology, vol 8, No 3, 1992
- Convention on Biological Diversity (CBD) article 1 and 2
- Convention on Biological Diversity (CBD) Linking Biodiversity Conservation and Poverty Alleviation: A State of Knowledge Review, 2010

- Convention on Migratory Species (CMS), article 1A
- Cioc M., “The game of conservation, international treaties to protect the world’s migratory animals”, Ohio university press, 2009, pg 11
- De Vido S., “La tutela dei cetacei nel diritto internazionale. Tra “diritti” dei mammiferi e principio di precauzione”, in Gazzola M. And Turchetto M. (eds.) “Per gli animali è sempre Treblinka”, Milano, 2016
- Doughty C., “The impact of large animal extinctions on nutrient fluxes in early river valley civilizations”, Ecosphere, Vol 4, 2013
- Eggert L. S. et Al., “Estimating population sizes for elusive animals: the forest elephants of Kakum National Park, Ghana”, Molecular Ecology, Vol 12, 2003
- Eggert L. S., “Using Genetic Profiles of African Forest Elephants to Infer Population Structure, Movements, and Habitat Use in a Conservation and Development Landscape in Gabon”, Conservation Biology, Vol 28, No 1, 2013
- Frank G. E. et Al, “Long delays in banning trade in threatened species”, Science, Vol 363, 2019
- Gandiwa E. et Al., “Illegal hunting and law enforcement during a period of economic decline in Zimbabwe: A case study of northern Gonarezhou National Park and adjacent areas”, Journal for Nature Conservation, vol 21, 2013
- Gascon et Al, “The importance and Benefits of species”, Current Biology
- Glennon, M. J., “Has International Law Failed the Elephant?”, The American Journal of International Law, Vol84, No. 1, pp. 1-43, Cambridge University Press
- Goodall J., “The sentience of chimpanzees and other animals”, in Jacky Turner and Joyce D’silva (eds.) “Animals, ethics and trade. The challenge of animal sentience”, USA and UK, 2006
- Graham M., et Al., “Patterns of crop-raiding by elephants, Loxodonta africana, in Laikipia, Kenya, and the management of human-elephant conflict”, Systematics Biodiversity, 2010
- Hedges S., “Monitoring Elephant Populations and Assessing Threats. A manual for researchers, managers and conservationists”, University Press, 2012

- Hutton, J., “Endangered Species, Threatened Convention: The Past, Present and Future of CITES, The Convention on International Trade in Endangered Species of Wild Fauna and Flora”, London, Earthscan, 2000
- International Whaling Convention, Preamble
- Ishida Y. et Al., “Reconciling Apparent Conflicts between Mitochondrial and Nuclear Phylogenies in African Elephants”, PLOSone, Vol 6, Issue 6, 2011
- IUCN report, Trade Measures in Multilateral Environmental Agreements, 2000
- Journal Officiel de la Republique Gabonaise n° 345
- Kangwana K., “Studying Elephants”, African Wildlife Foundation, Nairobi, Kenya, 1996
- Knapp S., “The link between diversity , ecosystem functions, and ecosystem services” in Matthias Schröter, Aletta Bonn, Stefan Klotz, Ralf Seppelt, Cornelia Baessler (eds.) “Atlas of Ecosystem Services : Drivers, Risks, and Societal Responses, Springer International Publishing, 2019
- Kevin J. Gaston “Biodiversity” in Navjot S., Ehrlich R. (eds.) “Conservation Biology for all”, Oxford, 2010
- Kunich J. C., Ark of the broken covenant protecting the world’s biodiversity hotspots, London, 2003
- Laurance. W., “Habitat destruction: death by thousand cuts”, in Navjot S., Ehrlich R. (eds.) “Conservation Biology for all”, Oxford, 2010
- Laurence W. F., “Agricultural expansion and its impacts on tropical nature”, Trends in Ecology & Evolution, Vol 29, 2014
- Linzey A., “what prevents Us from Recognizing Animal Sentience?”, in Jacky Turner and Joyce D’silva (eds.) “Animals, ethics and trade. The challenge of animal sentience”, USA and UK, 2006
- Lovejoy T., “Climate change”, in Navjot S., Ehrlich R. (eds.) “Conservation Biology for all”, Oxford, 2010
- Mace G.et Al., “Biodiversity and ecosystem services: a multilayered relationship”, Trends in Ecology and Evolution, 2012, vol 27

- Martin E., “Effective law enforcement in Ghana reduces elephant poaching and illegal ivory trade”, Pachyderm, No 48, 2010
- Matz N., “Chaos or Coherence? – Implementing and Enforcing the Conservation of Migratory Species through Various Legal Instruments”, Max-Planck-Institut für ausländisches öffentliches Recht und Völkerrecht, 2005
- Maisels F. et Al, “Devastating Decline of Forest Elephants in Central Africa”, PLOSone, volume 8, Issue 3, 2013
- Mcpherson M., et Al., “African Elephants: the effect of property rights and political stability”, Contemporary Economic Policy, Vol 18, No1, 2000
- MIKE Report, Levels and trends of illegal killing of elephants in Africa, 2016
- Munshi-South J., “Relatedness and Demography of African Forest Elephants: Inferences from Noninvasive Fecal DNA Analyses”, Journal of Heredity, Vol 102, 2011
- Nollkaemper A., “Framing Elephant Extinction”, ESIL reflections, vol 6, issue 3, 2014
- Peres C. A., “overexploitation”, in Navjot S., Ehrlich R. (eds.) “Conservation Biology for all”, Oxford, 2010
- Peter E., Sand H., “The effectiveness of international environmental agreements, a survey of existing legal instruments”, Cambridge, 1992
- Peter H. Raven and Jeffrey A. McNeelly “Biological Extinction: its scope and meaning for us” in Lakshman D. Guruswamy and Jeffrey A. McNeelly (eds.) “Protection of Global Biodiversity”, Durham and London, 1998
- Peters A., “Novel practice of the Security Council: Wildlife poaching and trafficking as a threat to peace”, EJIL talk, 2014
- Pimm S. L. et Al., “extinctions and the practice of preventing them”, in Navjot S., Ehrlich R. (eds.) “Conservation Biology for all”, Oxford, 2010
- Poulsen J. R., “Ecological consequences of forest elephant declines for Afrotropical forests”, Conservation Biology, 2017, Volume 00
- Poulsen J. R. at Al, “Poaching empties critical Central African wilderness of forest elephants”, Current Biology, vol 27, 2017

- Pozo R. A., et Al., “Elephant space-use is not a good predictor of crop-damage”, Biological Conservation, 2018
- Omeja A. P., et Al., “Changes in Elephant Abundance Affect Forest Composition or Regeneration?”, Biotropica, 2014
- Regan T., “Sentience and Rights”, in Jacky Turner and Joyce D’silva (eds.) “Animals, ethics and trade. The challenge of animal sentience”, USA and UK, 2006
- Report of Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, 2019
- Roca L. A. et Al., “Genomic inferences from Afrotheria and the evolution of elephants”, Current Opinion in Genetics & Development, 2005
- Roca, A., et Al., “Cytonuclear genomic dissociation in African elephant species”, Nat Genet 37, 2005
- Scheffers B., et Al., “Global wildlife trade across the tree of life”, Science, vol 366, issue 6461, 2019
- Sekercioglu C. H., “Ecosystem functions and services” in Navjot S., Ehrlich R. (eds.) “Conservation Biology for all”, Oxford, 2010
- Shoreman-Ouimet E., Kopnina H., “Culture and Conservation, beyond anthropocentrism”, London and New York, 2016
- Simberloff D., “invasive species”, in Navjot S., Ehrlich R. (eds.) “Conservation Biology for all”, Oxford, 2010
- Sitati N. W. et Al., “Predicting spatial aspects of human-elephant conflict”, Journal of Applied Ecology, Vol. 40, 2003
- Spinage C. A., “A review of Ivory exploitation and elephant population trends in Africa”, E. Afr. Wildl. J., Vol 11, 1973
- Tilman D, Downing JA. “Biodiversity and stability in grasslands”, Nature in Sonja Knapp “The link between diversity, ecosystem functions, and ecosystem services”, Springer International Publishing, 2019
- Turkalo A. et Al, “Long-term monitoring of Dzanga Bai Forest Elephants: forest clearing use patterns”, PLOS, vol 8, issue 12, 2013

- Turkalo A. K. et Al., “Demography of a forest elephant population”, PLOSone, 2018
- Turkalo A. K. et Al., “Slow intrinsic growth rate in forest elephants indicates recovery from poaching will require decades”, Journal of Applied Ecology, 2016
- Underwood F. M. et Al., “Dissecting the Illegal Ivory Trade: An Analysis of Ivory Seizures Data”, PLOSone, Vol 8, Issue 10, 2013
- United Nations Environmental Program (UNEP), “Guidelines on compliance with and enforcement of multilateral environmental agreements”
- WRI, IUCN and UNEP Global Biodiversity Strategy report, 1992
- World Heritage Convention, article 2
- World Heritage Committee, Operational Guidelines for the implementation of the World Heritage Convention, (2019)
- World Charter for Nature, 1982
- Walker K., “Labor costs and crop protection from wildlife predation: the case of elephants in Gabon”, Agricultural economics, Vol 43, 2012
- Wasser S. K. et Al., “Elephants, Ivory, and Trade”, Science, Vol 327, 2010
- Wasser S. K. et Al, “Combating the Illegal Trade in African Elephant Ivory with DNA Forensics”, Conservation Biology, Vol 22, No 4, 2008
-
- Western D. et Al, “Finding space for wildlife beyond national parks and reducing conflict through community-based conservation: the Kenya experience”, PARKS, vol 21.1, 2015
- Wittemyer G. et Al, “Illegal killing for Ivory drives global decline in African elephants”, PNAS, vol 111, No 36, 2014

WEBLIOGRAPHY

- A jointly convened UNESCO and UNEP high-level Roundtable held on 3 September 2002 in Johannesburg during the World Summit on Sustainable Development available at:http://wedocs.unep.org/bitstream/handle/20.500.11822/13741/Cultural_Diversity_and_Biodiversity.pdf?sequence=2&isAllowed=y
- African Elephant Database, accessible at the following link: http://africanelephantdatabase.org/
- African Elephant Fund webpage accessible at: http://www.africanelephantfund.org/
- African World Heritage Fund, webpage accessible at: https://whc.unesco.org/en/awhf
- American Museum of Natural History website accessible at https://www.amnh.org/exhibitions/dinosaurs-ancient-fossils/extinction/mass-extinction
- Bhanoo S., "The African Elephant, Split Into Two Species", The New York Times, December 2010. Last accessed: 6/12/2019. Article Available at: https://www.nytimes.com/2010/12/28/science/28obelephant.html
- Centre for Minority Rights Development (Kenya) and Minority Rights Group International website – Endorois case – accessible at https://www.escr-net.org/caselaw/2010/centre-minority-rights-development-kenya-and-minority-rights-group-international-behalf - last accessed 1/12/2019
- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) website accessible at https://www.cites.org/eng/disc/what.php
- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) website page concerning Animals and Plant committee accessible at https://www.cites.org/eng/disc/ac_pc.php
- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) Financing webpage accessible at https://www.cites.org/eng/disc/fund.php - last accessed 2/12/2019
- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) CoP18, Proposal for amendment of Appendix I or II, 3 June 2019, available at https://cites.org/eng/cop/18/prop/index.php

- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) CoP15, African Elephant Action Plan, 2010
- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) National Laws for Implementing the Convention webpage accessible at: https://cites.org/legislation
- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) National Legislation Project webpage accessible at: https://cites.org/legislation/National_Legislation_Project
- Convention on International Trade in Endangered Species of wild flora and fauna (CITES) National Ivory Action Plans webpage accessible at: https://www.cites.org/eng/niaps
- Convention on Biological Diversity (CBD) National Reports webpage accessible at: https://www.cbd.int/reports/
- Convention on Migratory Species (CMS) website accessible at https://www.cms.int/en/legalinstrument/cms
- Convention on Migratory Species National Reports webpage accessible at: https://www.cms.int/en/documents/national-reports
- CMS report of the 45th Meeting of the Standing Committee, 2016, available at: https://www.cms.int/sites/default/files/document/cms_stc45_doc-10-2_expenditure-report-cms-aug16_e.pdf
- CMS document about financial and administrative matters adopted by the Conference of the parties at its 12th meeting in 2017 accessible at: https://www.cms.int/sites/default/files/document/cms_cop12_res.12.2_financial-and-administrative_matters_e.pdf - last accessed: 31/12/2019
- CMS National Reports, visit https://www.cms.int/en/documents/national-reports - last accessed: 1/01/2020
- CMS webpage about the Review Mechanism accessible at: https://www.cms.int/en/activities/review-mechanism - last accessed: 01/01/2020
- Corruption Perception Index 2019 accessible at the following website: https://www.transparency.org/cpi2019

- Democratic Republic of the Congo National Biodiversity Strategies and Action Plan (NBSAPs) accessible at: https://www.cbd.int/doc/world/cd/cd-nbsap-v3-fr.pdf
- ECOLEX, The Gateway to environmental law webpage accessible at: https://www.ecolex.org/
- Gilbert N., "African Elephants are two different species", Nature International weekly Journal of Science, December 2010. Last accessed: 6/12/2019. Article Available at: https://www.nature.com/news/2010/101221/full/news.2010.691.html
- Gabon 6th CBD National Report accessible at: https://www.cbd.int/doc/nr/nr-06/ga-nr-06-fr.pdf
- InforMEA webpage accessible at: https://www.informea.org/en
- IUCN Report, Elephant meat trade in Central Africa, 2011. Available at: https://portals.iucn.org/library/sites/library/files/documents/SSC-OP-045.pdf
- IUCN website accessible at https://www.iucn.org/about (last accessed: 19/09/2019)
- IUCN website page about the IUCN Red List of Threatened species accessible at https://www.iucn.org/theme/species/our-work/iucn-red-list-threatened-species (last accessed: 19/09/2019)
- IUCN 2019. *The IUCN Red List of Threatened Species. Version 2019-2*. http://www.iucnredlist.org
- IUCN, World Heritage Outlook 2 – A conservation assessment of all natural World Heritage sites, 2017, available at: https://www.iucn.org/theme/world-heritage
- IUCN, Tools for measuring, modelling, and valuing ecosystem services, 2018, available at: https://portals.iucn.org/library/sites/library/files/documents/PAG-028-En.pdf
- IUCN, A Report by IUCN - The World Conservation Union on the Effectiveness of the Trade Measurers Contained in The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), available at: https://cites.org/sites/default/files/common/prog/economics/iucn-trademeasuresinCITES.pdf
- IUCN, A review of IUCN engagement in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), 2011, available at:

https://www.iucn.org/sites/dev/files/import/downloads/review_of_iucn_engagement_in_cites_18april2011_withcover.pdf

- IUCN African Elephant Status Report 2016 available at: http://africanelephantdatabase.org/report
- IUCN African Elephant Status Report 2013 available at: http://africanelephantdatabase.org/report
- IUCN African Elephant Status Report 2007 available at: http://africanelephantdatabase.org/report
- IUCN African Elephant Status Report 2002 available at: http://africanelephantdatabase.org/report
- IUCN African Elephant Status Report 1998 available at: http://africanelephantdatabase.org/report
- IUCN African Elephant Status Report 1995 available at: http://africanelephantdatabase.org/report
- Lopé-Okanda official website, accessible at: https://www.pmlope.org/sur-le-terrain/ - last accessed: 12/01/2020
- Monitoring the Illegal Killing of Elephants (MIKE) webpage accessible at: https://www.cites.org/eng/prog/mike/index.php
- NASA earth observatory website. Accessible at: https://earthobservatory.nasa.gov/images/145242/water-shortages-in-india
- National Ivory Action Plan of Gabon 2015–2016 available at: https://cites.org/eng/prog/niaps/category_c_parties_progress_reports
- National Ivory Action Plan of Gabon 2017–2018 available at: https://cites.org/eng/prog/niaps/category_c_parties_progress_reports
- National Ivory Action Plan of the Democratic Republic of The Congo 2018–2019 available at: https://cites.org/eng/prog/niaps/category_c_parties_progress_reports
- Platt J. R., “Isn't It Time We Recognize African Elephants as 2 Separate Species?”, Scientific American, June 2015. Article Available at: https://blogs.scientificamerican.com/extinction-countdown/african-elephant-species/

- Programme document for the implementation of the African Nature Programme from 2014 to 2017 accessible at: https://whc.unesco.org/en/africa-nature/
- Rolhand N. et Al., "Genomic DNA Sequences from Mastodon and Woolly Mammoth Reveal Deep Speciation of Forest and Savanna Elephants" PLOSBiology, 2010
- United Republic of Tanzania 6th CBD National Report accessible at: https://chm.cbd.int/database/record?documentID=245938
- United Republic of Tanzania Ministry of Natural Resources and Tourism webpage accessible at: https://www.maliasili.go.tz/sectors
- UNESCO Report about the Second Cycle of Periodic Reporting in Africa, 2011, available at: https://whc.unesco.org/en/periodicreporting/
- UNESCO website accessible at www.unesco.org (last accessed: 19/09/2019)
- UNESCO website accessible at https://whc.unesco.org/en/world-heritage-centre/ (last accessed: 14/10/2019)
- UNESCO page about Ecosystem and Relict Cultural Landscape of Lopé-Okanda accessible at: https://whc.unesco.org/en/list/1147 - last accessed: 12/01/2020
- UNEP website page accessible at https://www.unenvironment.org/about-un-environment (last accessed (19/09/2019)
- UNEP, CITES, TRAFFIC, IUCN Report "Elephants in the Dust – The African Elephant Crisis. A Rapid Response Assessment", 2013, available at: https://www.iucn.org/content/elephants-dust-african-elephant-crisis-a-rapid-response-assessment
- UNEP-WCMC and IUCN (year), Protected Planet: The Global Database on Protected Area Management Effectiveness (GD-PAME) [On-line], [insert month/year of the version downloaded]. Cambridge, UK: UNEP-WCMC. Available at: www.protectedplanet.net.
- Tanzania Wildlife Management Authority webpage accessible at: https://www.tawa.go.tz/conservation/wildlife-protection/ - last accessed 19/01/2020
- TRAFFIC Report, "Ivory Markets in Central Africa. Market Surveys in Cameroon, Central Africa Republic, Congo, Democratic Republic of Congo and Gabon: 2007, 2009,

2014/2015", 2017 available at: https://www.traffic.org/site/assets/files/1615/central-africa-ivory-report-final.pdf

- TRAFFIC Report, Workshop Proceedings: sub-regional action planning to strengthen regional collaboration, 2016. Available at: https://www.traffic.org/site/assets/files/8352/workshop_proceedings_support_of_the_implementation_of_national_ivory_action_plans_in_central_africa.pdf
- TRAFFIC website accessible at: https://www.traffic.org/what-we-do/perspectives/the-ivory-trade/
- See TRAFFIC website at https://www.traffic.org/what-we-do/projects-and-approaches/trade-monitoring/ - last accessed 18/12/2019
- See https://www.traffic.org/what-we-do/projects-and-approaches/trade-monitoring/elephant-trade-information-system/ - last accessed 24/09/2019
- Status of legislative progress for implementing CITES (Updated on November 2019) available at: https://cites.org/legislation/National_Legislation_Project
- The World Bank website, webpage accessible at: https://www.worldbank.org/en/results/2013/04/09/biodiversity-sector-results-profile - last accessed: 11/01/2020
- J., "African Elephant' Actually Two Separate Species", Livescience, December 2010. Last accessed: 6/12/2019. Article Available at: https://www.livescience.com/9182-african-elephant-separate-species.html
- World Animal Protection website accessible at https://www.worldanimalprotection.org/ Last accessed: 15/09/2019
- World Heritage Convention Periodic Reporting webpage accessible at https://whc.unesco.org/en/periodicreporting/ - last accessed 27/11/2019
- World Heritage Convention Tentative list webpage accessible at https://whc.unesco.org/en/tentativelists/state=tz – last accessed 26/11/2019
- World Heritage Convention Financial Regulations webpage accessible at https://whc.unesco.org/en/financialregulations/ - last accessed 29/11/2019

- Zimbabwe 6th CBD National Report available at: https://www.cbd.int/doc/nr/nr-06/zw-nr-06-en.pdf
- Zimbabwe Parks and Wildlife Management Authority webpage accessible at: https://zimparks.org/conservation/kavango-zambezi-golf-tournament/
- "Greta Thunberg condemns world leaders in emotional speech at UN", The Guardian. Article available at : https://www.theguardian.com/environment/2019/sep/23/greta-thunberg-speech-un-2019-address - last accessed: 24/09/2019
- "What is the Convention on International Trade in Endangered Species?", National Geographic. Article available at: https://www.nationalgeographic.com/animals/reference/convention-on-international-trade-in-endangered-species/ - Last accessed: 4/12/2019
- "CITES has its critics, but record-breaking conference is critical for world's wildlife", WWF news. Article available at: https://www.wwf.org.za/?18701/CITES-STimes-oped - Last accessed: 4/12/2019
- "Long delays in banning trade in threatened species", Science. Article available at: https://science.sciencemag.org/content/363/6428/686 – Last Accessed: 4/12/2019
- "Should we give up half of the Earth to wildlife?", The Guardian, 17/02/2018
- "Suffering unseen: the dark truth behind wildlife tourism", national geographic maganize, June 2019. Last access: 09/15/2019. Article available at the following link: https://www.nationalgeographic.com/magazine/2019/06/global-wildlife-tourism-social-media-causes-animal-suffering/
- "Global wildlife trade a key factor in species decline", Financial Times, 2019. Article available at the following link: https://www.ft.com/content/f2f48da6-e513-11e9-b112-9624ec9edc59?accessToken=zwAAAW7yKBdAkdPy9I2m5RMR6dOxEpYk7J7cWQ.MEUCIQDmfmM07y31-KvZdYPI39oxBCwtfxeXV9bG2gFqAnxBwAIgaTUDfOuApxU7g0THT-zv6JB4v3-XiA5son_d6kSLZKQ&sharetype=gift?token=4da26357-2960-4fc2-9e8a-9490e41fffff
- See http://www.cms.int/west-african-elephants – last accessed: 28/12/2019
- See: https://www.cms.int/convention-bodies/standing-committee - last accessed 29/12/2019

- See CMS SGP webpage accessible at: https://www.cms.int/en/activities/small-grants/about - last accessed: 31/12/2019
- See the Resolution text accessible at: https://www.cms.int/sites/default/files/document/cms_cop12_res.12.9_review-mechanism_e_0.pdf
- See the Decisions text accessible at: https://www.cms.int/sites/default/files/document/cms_cop12_decisions_e_0.pdf
- See Okapi Wildlife Reserve UNESCO webpage accessible at: https://whc.unesco.org/en/list/718
- See Kahuzi-Biega National Park UNESCO webpage accessible at: https://whc.unesco.org/en/list/137
- See https://whc.unesco.org/en/list/1147/assistance/
- See the Selous Game Reserve UNESCO webpage accessible at https://whc.unesco.org/en/list/199
- See the Serengeti National Park UNESCO webpage accessible at: https://whc.unesco.org/en/list/156 - last accessed: 14/01/2020
- See Mana Pools National Park, Sapi and Chewore Safari Areas UNESCO webpage accessible at: https://whc.unesco.org/en/list/302