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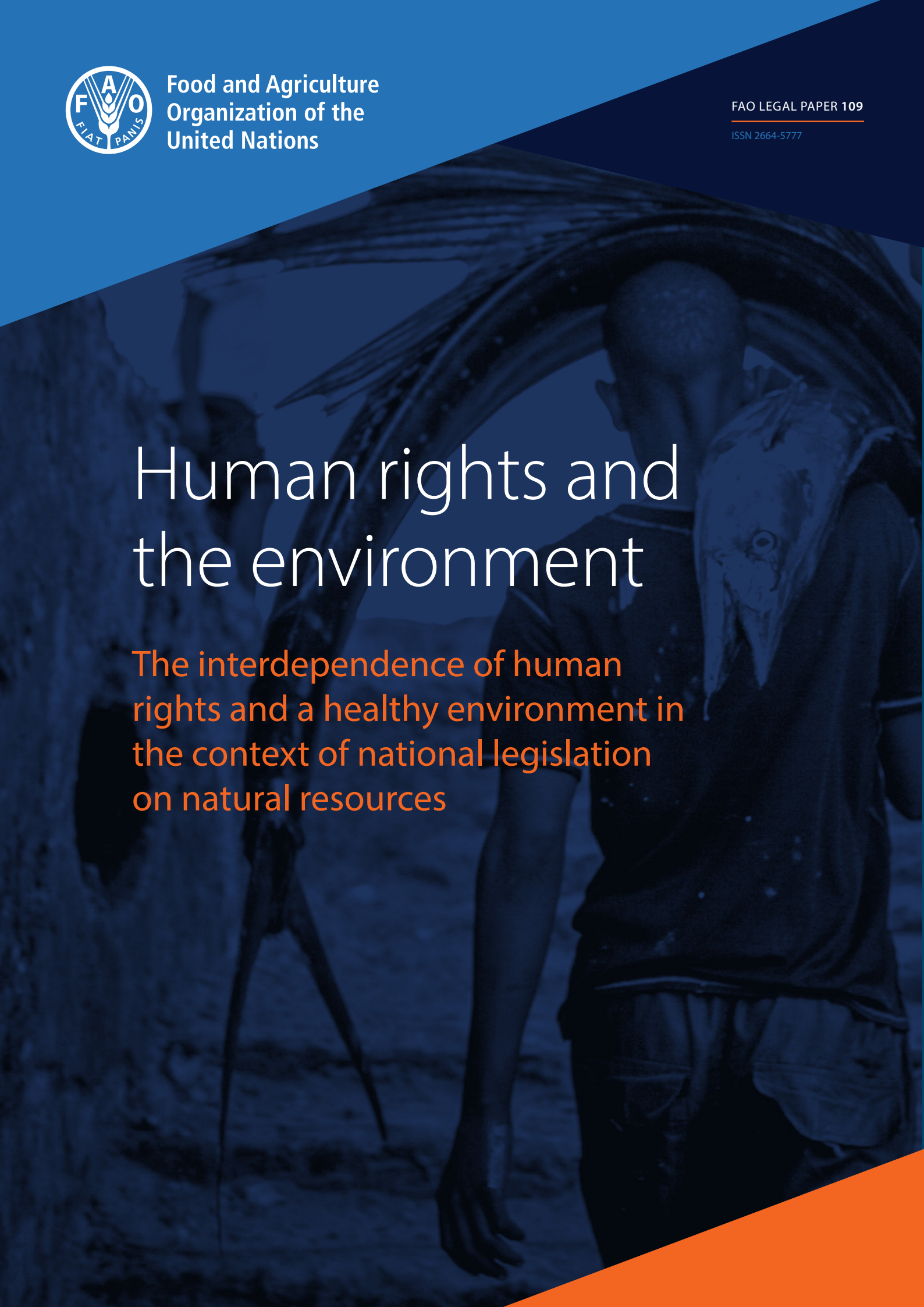

Human rights and the environment

The interdependence of human rights and a healthy environment in the context of national legislation on natural resources

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Foreword

Personnel in the Development Law Service of the Food and Agriculture Organization of the United Nations (FAO) come from a variety of legal backgrounds. Some are specialized in fields relating to food, agricultural land, water or fisheries law, while others have an educational background in either international human rights law or in international environmental law, in addition to their national law degrees. For this reason, the Development Law Service considered it valuable to enhance its capacities in applying both human rights law and environmental law, to take full advantage of the many important developments in both fields for natural resources legislation.

In order to achieve this, FAO hired the University of Strathclyde to grant the services of Elisa Morgera, Professor of Global Environmental Law and Director of the Strathclyde Centre for Environmental Law & Governance and John H. Knox, Henry C. Lauerman Professor of International Law at Wake Forest University, former Special Rapporteur for the United Nations Human Rights Council (HRC) on environment and human rights, to hold two capacity development sessions with the Development Law Service and other interested FAO colleagues.

As it is to be expected that natural resources legal experts involved in technical legislative work for other international institutions and organizations, or those working with national governments or non-governmental organizations (NGOs) share similar characteristics to the personnel of the FAO Development Law Service, it was decided to make the content of the sessions more widely available. On this basis, and as a result of the valuable discussions that transpired during the delivery of the sessions and other inputs received from FAO, there was consensus to further transmit this knowledge and adapt it into this legal paper.

Acronyms and abbreviations

CBD	Convention on Biological Diversity
CCPR	United Nations Human Rights Committee
CEACR	Committee of Experts on the Application of Conventions and Recommendations
CEDAW	Convention on Elimination of All Forms of Discrimination against Women
CESCR	Committee on Economic, Social, and Cultural Rights
COP	Forest farmer cooperative organization
CRC	Convention on the Rights of the Child
CRPD	Convention on the Rights of Persons with Disabilities
ECHR	European Court of Human Rights European Court of Human Rights
EIA	Environmental impact assessment
FAO	Food and Agriculture Organization of the United Nations
FILAC	Fund for the Development of the Indigenous Peoples of Latin American and the Caribbean
FPIC	Free, prior and informed consent
GC	General Comment
GR	General Recommendation
HRC	United Nations Human Rights Council
IACtHR	Inter-American Court of Human Rights
ICCA	Indigenous and Community Conserved Areas
ICCPR	International Covenant on Civil and Political Rights
ICERD	International Covenant for Economic, Social, and Cultural Rights
ICESCR	International Convention on the Elimination of all forms of Racial Discrimination
ILO	International Covenant for Economic Social and Cultural Rights
IPBES	Intergovernmental Science-Policy Platform on Biodiversity International Labour Organization
ITPGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture

OECD	Organisation for Economic Co-operation and Development
OHCHR	Office of the High Commissioner for Human Rights
REDD+	Reducing emissions from deforestation and forest degradation
SDG	Sustainable Development Goals
UDHR	Universal Declaration of Human Rights
UN	United Nations
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNDROP	United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas
UNEP	United Nations Environment Programme
UNCCD	United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa
UNFCCC	UN Framework Convention on Climate Change
UNGA	United Nations General Assembly
VGFSyN	Voluntary Guidelines on Food Systems and Nutrition
VGGT	Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security
WFP	World Food Programme
WHO	World Health Organization

1. Introduction

International environmental law developed initially in parallel with international human rights law, despite some references in early environmental documents (such as the *Stockholm Declaration of 1972*) to human rights. However, international human rights law is increasingly being brought to bear on the health and environmental consequences of agricultural practices, while at the same time a human right to a safe and healthy environment has gained increasing international recognition. For example, the United Nations Human Rights Committee (CCPR), which monitors the *International Covenant on Civil and Political Rights (ICCPR)*, held in 2019 that a state had violated its human rights obligations by not adequately regulating the use of chemicals in large-scale agricultural production, which had caused the death of one person, caused serious health problems for others, along with damage to their fruit trees, farm animals, crops, and water. The Committee stated in a communication on *Portillo Cáceres and others v. Paraguay* that the state's failure had violated its obligations to respect and ensure the victims' rights to life and to privacy, family, and home life. The Committee has encouraged potential claimants to bring other cases like this one to its attention.

This legal paper reflects on the evolution of international law on the interdependence of human rights and the environment. It illustrates their significance for the development and implementation of national laws on agricultural development and the management of renewable natural resources, ranging from land, water, fisheries, plants, and animals, to food, forestry, wildlife, biodiversity and trade laws. It is also relevant for national laws on climate change, gender equality, agribusiness operations, the right to food, the right to water and the prevention of potential conflicts arising from the competition for natural resources. The paper brings together lessons learned through the mandate of the former United Nations Special Rapporteur on human rights and the environment, John H. Knox, and academic research on international biodiversity law and human rights, by Elisa Morgera. In Section 2, the paper gives an overview of the increasing cross-fertilization between international environmental law and international human rights law. Section 3 focuses specifically on nature conservation and the human rights of Indigenous Peoples and other rural rights holders. Section 4 focuses on other areas of the nexus between human rights, climate change and biodiversity that are of particular relevance to national laws on natural resources. The conclusions in Section 5 summarize the key messages arising from the previous sections of the paper.

2. Environmental human rights law

The last 25 years have seen an enormous increase in the breadth and depth of environmental human rights law. This development has occurred along three main paths: (1) recognition of an autonomous right to a healthy environment at the regional and national levels; (2) the inclusion of procedural "access rights" in environmental treaties; and (3) the application by human rights bodies of other human rights, including rights to life and health, to environmental issues, etc. This section briefly describes each of the three areas and outlines the current and evolving human rights obligations of states relating to the environment, as set out in the *Framework Principles on Human Rights and the Environment* that were presented to the Human Rights Council in 2018 by the Special Rapporteur on human rights and the environment.

2.1. Recognition of an autonomous human right to a healthy environment

The first way that the relationship between human rights and the environment has been codified is through recognition of the human right to a healthy environment. David R. Boyd, the current Special Rapporteur on human rights and the environment, reports that, 156 of the 193 members of the United Nations have legally recognized the right to a healthy environment through regional treaties and/or national laws (Boyd, 2019a).

In 1981, the *African Charter on Human and Peoples' Rights (African Charter)* became the first human rights treaty to include an environmental right, providing in Article 24 that all peoples have the right to "a general satisfactory environment favourable to their development." Seven years later, the *Additional Protocol to the American Convention on Human Rights (San Salvador Protocol)* in Article 11, was the first treaty to state the "right to live in a healthy environment" as an individual right. Two later instruments, the 2004 *Arab Charter on Human Rights (Arab Charter)* and the 2012 *Human Rights Declaration of the Association of South East Asian Nations (ASEAN) countries (ASEAN Declaration)*, include the right to a "healthy" or "safe, clean, and sustainable" environment as an element of the right to an adequate standard of living (Article 38 and Principle 28(f) respectively). Although the *Convention for the Protection of Human Rights and Fundamental Freedoms (European Convention on Human Rights)* and the *European Social Charter* do not explicitly recognize the right to a healthy environment, in 1998, the UN Economic Commission for Europe adopted the *(Aarhus) Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters*. The Aarhus Convention provides for rights of access to information, public participation, and rights to remedy, and states in Article 1 that its parties shall guarantee these rights "In order to contribute to the protection of the right of every person of present and future generations to live in an environment adequate to his or her health and well-being." Most recently, in 2018, Latin American and Caribbean countries adopted the *Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and the Caribbean (Escazú Agreement)*, which includes in Article 1 the "right of every person of present and future generations to live in a healthy environment and to sustainable development."

Most countries in the world now belong to a regional treaty recognizing the right to a healthy environment, including 52 parties to the African Charter, 16 parties to the San Salvador Protocol, 16 parties to the Arab Charter, 45 parties to the Aarhus Convention, and 12 parties to

the Escazú Agreement (of which 7 are also parties to the San Salvador Protocol). Furthermore, another 10 states have adopted the ASEAN Declaration.

At the national level, at least 100 countries provide direct constitutional protection to some form of a right to a healthy environment (Boyd, 2018), and at least 12 other countries, including India and Pakistan, have asserted that the right to a healthy environment is inherent in the constitutional right to life (Boyd, 2011). In some countries, the right has rarely, if ever, resulted in litigation. But many other countries, including for example Argentina, Costa Rica, India, Pakistan, and the Philippines, have developed an extensive domestic jurisprudence based on the right to a healthy environment (Boyd, 2012; Daly and May, 2018).

In most of the regional human rights systems, the right is not subject to independent judicial or quasi-judicial review. However, the African Charter's recognition of the right of peoples to "a general satisfactory environment favorable to their development" (Article 24), was the basis for an important decision by the African Commission on Human and Peoples' Rights in 2001, in *Social and Economic Rights Action Centre v. Nigeria*. The Commission found that oil pollution of the Niger Delta region by a consortium of the Nigerian Government and Royal Dutch Shell had violated the human rights of the Ogoni people living in the Delta, including not only the right to a satisfactory environment protected in Article 24 of the Charter, but also the right to health recognized in Article 16. The Commission stated that Nigeria had duties to take "reasonable and other measures to prevent pollution and ecological degradation, to promote conservation, and to secure an ecologically sustainable development and use of natural resources" (para. 52), and that compliance with the "spirit" of Articles 16 and 24:

> must also include ordering or at least permitting independent scientific monitoring of threatened environments, requiring and publicizing environmental and social impact studies prior to any major industrial development, undertaking appropriate monitoring and providing information to those communities exposed to hazardous materials and activities and providing meaningful opportunities for individuals to be heard and to participate in the development decisions affecting their communities (African Charter, para. 53).

More recently, in 2017, the Inter-American Court of Human Rights (IACtHR) issued an extensive advisory opinion on human rights and the environment, which addressed the human right to a healthy environment as well as several other aspects of the relationship between human rights and the environment. The Court stated:

> The right to a healthy environment has been understood as a right that has both individual and also collective connotations. In its collective dimension, the right to a healthy environment constitutes a universal value that is owed to both present and future generations. That said, the right to a healthy environment also has an individual dimension insofar as its violation may have a direct and an indirect impact on the individual owing to its connectivity to other rights, such as the rights to health, personal integrity, and life. Environmental degradation may cause irreparable harm to human beings; thus, a healthy environment is a fundamental right for the existence of humankind (IACtHR, para. 59).
>
> The Working Group on the Protocol of San Salvador indicated that the right to a healthy environment, as established in this instrument, involved the following five State obligations: (a) guaranteeing everyone, without any discrimination, a healthy environment in which to live; (b) guaranteeing everyone, without any discrimination, basic public services; (c) promoting environmental protection; (d) promoting environmental conservation, and (e) promoting improvement of the environment (IACtHR, para. 60).

> The Court considers it important to stress that, as an autonomous right, the right to a healthy environment, unlike other rights, protects the components of the environment, such as forests, rivers and seas, as legal interests in themselves, even in the absence of the certainty or evidence of a risk to individuals. This means that it protects nature and the environment, not only because of the benefits they provide to humanity or the effects that their degradation may have on other human rights, such as health, life or personal integrity, but because of their importance to the other living organisms with which we share the planet that also merit protection in their own right. In this regard, the Court notes a tendency, not only in court judgments, but also in Constitutions, to recognize legal personality and, consequently, rights to nature (IACtHR, para. 62).

In 2021, the HRC adopted a *Resolution on the human right to a clean, healthy and sustainable environment*, by 43 votes with no contrary votes and 4 abstentions, which *inter alia:*

- recognizes the right to a clean, healthy and sustainable environment as a human right that is important for the enjoyment of human rights (para. 1);
- notes that the right to a clean, healthy and sustainable environment is related to other rights and existing international law (para. 2);
- affirms that the promotion of the human right to a clean, healthy and sustainable environment requires the full implementation of the multilateral environmental agreements under the principles of international environmental law (para. 3).

States were also encouraged to:

- engage in capacity building efforts to protect the environment to fulfil their human rights obligations and commitments;
- enhance cooperation between states and the Office of the UN High Commissioner for Human Rights and other UN, international and regional bodies and processes, including civil society and non-state stakeholders on the implementation of the right;
- exchange good practices and knowledge to "build synergies between the protection of human rights and the protection of the environment";
- adopt policies for the enjoyment of the right to a clean, healthy and sustainable environment as appropriate, including with respect to biodiversity and ecosystems (para. 4).

The HRC also invited the United Nations General Assembly (UNGA) to consider the matter at future meetings (para. 5).

2.2. Access rights in international environmental instruments

A second path in the development of environmental human rights law has been the inclusion in international environmental agreements of rights of access to information, to public participation, and to justice in environmental matters. Multilateral environmental agreements

usually do not refer to human rights explicitly, although an exception is the *2015 Paris Agreement* on climate change, whose preamble states that its parties "should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights."

However, many environmental treaties do encourage or require their parties to provide access to information or to promote public participation on issues within their scope: Article 6(a) of the *United Nations Framework Convention on Climate Change (UNFCCC)*, 1992; Article 3(a) of the *United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa (UNCCD)*, 1994; Article 15(2) of the *Rotterdam Convention on Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (Rotterdam Convention)*, 1998; Articles 7(2) and 10(1) of the *Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention)*, 2001; and Article 18(1) of the *Minamata Convention on Mercury (Minamata Convention)*, 2013. Principle 10 of the *Rio Declaration on Environment and Development (Rio Declaration)*, 1992, refers to access to information, participation, and remedy in specifically clear language:

> Environmental issues are best handled with participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.

In 2010, the Governing Council of the United Nations Environment Programme (UNEP) adopted the *Guidelines for the Development of National Legislation on Access to Information, Public Participation and Access to Justice in Environmental Matters (Bali Guidelines)*, a set of 26 voluntary guidelines that provide general guidance to states on promoting the effective implementation of their commitments to Principle 10 within the framework of their national legislation and processes.

At the regional level, the Aarhus Convention, which has 47 parties in Europe and Central Asia, and the Escazú Agreement, which has 12 parties in Latin America and the Caribbean, each set out more detailed requirements that their parties collect and provide including environmental information, they facilitate public participation in environmental decision-making, and ensure that members of the public have access to legal remedies. Both of these agreements explicitly connect the rights detailed within to the human right to a healthy environment (Article 1 of both agreements).

2.3. The application of human rights to environmental issues by human rights bodies

The third path in the development of environmental human rights law has been the "greening" of human rights to life, health, property and others, by applying them to environmental issues. International human rights bodies have long held that states have obligations not only to refrain from violating human rights directly, but also to protect their enjoyment from interference by

others. Human rights tribunals and other expert bodies have held that environmental harm interferes with the full enjoyment of a wide range of human rights and that states have failed to meet their obligations to protect against such interference.

The first case from a regional human rights tribunal to illustrate this approach was *López Ostra v. Spain* in 1994, in which the European Court of Human Rights held that pollution that prevented an individual from living in her home could interfere with her right to respect for private and family life protected by Article 8 of the *European Convention on Human Rights*, even if the pollution did not endanger her health. The Court held that states have a duty to take reasonable and appropriate measures to protect against such interference, including by corporations. Later decisions construing Article 8 have allowed governments discretion in setting substantive standards but have imposed strict procedural requirements, including that, states assess the environmental effects of proposed activities, make environmental information public, and provide access to judicial remedies. Similarly, the European Court has held that to protect the right to life (recognized in Article 2 of the Convention) from environmental harm, states must establish legal frameworks to deter violations and investigate and punish violations if they nevertheless occur (Council of Europe, 2012).

In its 2017 advisory opinion on human rights and the environment, the Inter-American Court stated, among other things, that the rights to information, public participation, and access to justice are integral to the rights of life and personal integrity in the environmental context (IACtHR, 2017).

Decisions by regional tribunals have also influenced domestic courts in their application of human rights to environmental issues. For example, in 2019, the Supreme Court of the Netherlands held that Articles 2 and 8 of the European Convention on Human Rights impose a duty on the Dutch government to protect against the serious risk of loss of life and disruption of family life threatened by climate change, and that the government in *Netherlands v. Urgenda* had violated this duty by not striving to reduce greenhouse gas emissions at least 25 percent from 1990 levels by the end of 2020.

Human rights treaty bodies – that is, the bodies of independent experts appointed to monitor compliance with the UN human rights treaties – have also addressed environmental issues in construing their treaties. For example, in 2018, the United Nations Human Rights Committee, which oversees the *International Covenant on Civil and Political Rights (ICCPR)*, issued its *General Comment No. 36*, on the right to life protected by Article 6 of the Covenant. The Committee stated, among other things, that the duty of states to protect life "implies that States parties should take appropriate measures to address the general conditions in society that may give rise to direct threats to life or prevent individuals from enjoying their right to life with dignity," which may include "degradation of the environment" (GC 36, CCPR, 2018, para. 26). It went on to state:

> Environmental degradation, climate change and unsustainable development constitute some of the most pressing and serious threats to the ability of present and future generations to enjoy the right to life. Obligations of States parties under international environmental law should thus inform the contents of article 6 of the Covenant, and the obligation of States parties to respect and ensure the right to life should also inform their relevant obligations under international environmental law. Implementation of the obligation to respect and ensure the right to life, and in particular life with dignity, depends, inter alia, on measures taken by States parties to preserve the environment and protect it against harm, pollution and

> climate change caused by public and private actors. States parties should therefore ensure sustainable use of natural resources, develop and implement substantive environmental standards, conduct environmental impact assessments and consult with relevant States about activities likely to have a significant impact on the environment, provide notification to other States concerned about natural disasters and emergencies and cooperate with them, provide appropriate access to information on environmental hazards and pay due regard to the precautionary approach. (para. 62)

In August 2019, the Human Rights Committee (CCPR) held for the first time that a state had violated the right to life by failing to protect individuals from environmental harm – specifically citing the *Portillo Cáceres and others v. Paraguay* legal case wherein the fumigation of toxic chemicals on agricultural fields caused injury and death. The Committee held that the government had an obligation to investigate and sanction those responsible, provide full reparation to the victims, and take measures to prevent similar violations in the future (CCPR, 2019).

More environmental cases are pending before human rights treaty bodies, including two claims concerning climate change: a petition by Torres Strait Islanders against Australia before the Human Rights Committee, and a claim by Greta Thunberg and 15 other youth and children against Argentina, Brazil, France, Germany, and Turkey before the Committee on the Rights of the Child, which was the subject of oral argument in May 2021.

Many of the independent experts and Special Rapporteurs appointed by the Human Rights Council (HRC) and its predecessor, the Human Rights Commission, have addressed environmental issues within the scope of their mandates. In 1995, the Commission appointed a Special Rapporteur to investigate the effects on human rights of illicit dumping of toxic products in developing countries. That mandate has since expanded to include the management and disposal of hazardous substances and wastes more generally (see Tuncak, 2016). Other mandate-holders that have addressed environmental issues on behalf of the UN include: the Special Rapporteur on the rights of Indigenous Peoples (see Anaya, 2011); the Special Rapporteur on human rights defenders (see Forst, 2016); the Special Rapporteur on the right to food (see Elver, 2017); the Special Rapporteur on extreme poverty and human rights (see Alston, 2019); and the Special Rapporteur in the field of cultural rights (see Bennoune, 2020).

In 2012, the Council created a new mandate for an independent expert to study the human rights obligations relating to the enjoyment of a safe, clean, healthy, and sustainable environment. The first mandate-holder, John H. Knox, described how human rights bodies have applied human rights norms to environmental issues (see Knox, 2013). In 2015, the Council renewed the mandate for another three-year term, changed the title of the mandate-holder to Special Rapporteur, and requested that he promote the realization of the obligations. To that end, in 2018 he prepared the *Framework Principles on Human Rights and the Environment* that are described in more detail below. Also in 2018, the Council renewed the mandate for another three years, appointing David R. Boyd as the Special Rapporteur. Boyd has issued a series of reports describing how human rights law, and especially the right to a healthy environment, applies to particular substantive areas, including air pollution, climate change, and biodiversity (see Boyd, 2019b, 2019c, 2020, 2021). He has also published a report describing good practices in the implementation of the right to a healthy environment (see Boyd, 2019a).

2.4. The Framework Principles on Human Rights and the Environment

The *Framework Principles on Human Rights and the Environment* presented to the UN Human Rights Council in 2018 by the Special Rapporteur on human rights and the environment, John Knox, set out obligations of states under international human rights law because they relate to the enjoyment of a safe, clean, healthy and sustainable environment (Knox, 2018a).[1] The 16 Framework Principles are based primarily on international instruments and decisions by international institutions. The goal was to clarify and facilitate implementation of the universal human rights obligations of states relating to the enjoyment of a safe, clean, healthy and sustainable environment, in accordance with the mandate given to the Special Rapporteur by the HRC in the resolutions creating and renewing the mandate.

While many of the obligations described in the Framework Principles and commentary are based directly on treaties or binding decisions from human rights tribunals, others draw on statements of human rights bodies that have the authority to interpret human rights law but not necessarily to issue binding decisions. The coherence of these interpretations, however, is strong evidence of the converging trends towards greater uniformity and certainty in the understanding of human rights obligations relating to the environment. These trends are further supported by state practice, including in international environmental instruments and before human rights bodies. As a result, as the Special Rapporteur made clear when he presented the Framework Principles to the Council, they reflect actual and emerging international human rights law.

Like other international human rights norms, they apply to all levels of government authorities, from branches and agencies of the national government to local or municipal agencies. This is important, because in many countries, local governments bear much of the day-to-day responsibility for the implementation of environmental regulations and standards, as well as responsibility to manage natural resources and license their use. The Framework Principles provide a sturdy basis for understanding and implementing human rights obligations relating to the environment, but they do not purport to describe all of the human rights obligations that can be brought to bear on environmental issues today, much less attempt to predict those that may evolve in the future. They describe the main human rights obligations that currently apply in the environmental context in order to facilitate their practical implementation and further development.

Framework Principles 1 and 2:
States should ensure a safe, clean, healthy and sustainable environment in order to respect, protect and fulfil human rights, and States should respect, protect and fulfil human rights in order to ensure a safe, clean, healthy and sustainable environment.

The first two Framework Principles set out the interdependent relationship of human rights and environmental protection. A safe, clean, healthy and sustainable environment is necessary for the full enjoyment of many human rights, including the right to life, to the highest attainable standard of physical and mental health, to an adequate standard of living, and to participation in cultural life and to development, as well as the overarching right to a healthy environment itself. At the same time, the exercise of human rights, including rights to freedom of expression

[1] The report and a list of selected sources for the Framework Principles is available at www.ohchr.org/EN/Issues/Environment/SREnvironment/Pageos/FrameworkPrinciplesReport.aspx

and association, to education and information, and to participation and effective remedies, is vital to the protection of the environment.

Framework Principle 3:
States should prohibit discrimination and ensure equal and effective protection against discrimination in relation to the enjoyment of a safe, clean, healthy and sustainable environment.

The obligations of states to prohibit discrimination and to ensure equal and effective protection against discrimination[2] apply to the equal enjoyment of human rights relating to a safe, clean, healthy and sustainable environment – as provided for in Articles 2(1) and 16 of the ICCPR; Article 2(2) of the *International Covenant for Economic Social and Cultural Rights (ICESCR) of 1966*; Articles 2 and 5 of the *International Convention on the Elimination of all forms of Racial Discrimination (ICERD) of 1965*; Article 2 of the *Convention on Elimination on All Forms of Discrimination against Women (CEDAW) of 1979*; Article 2 of the *Convention on the Rights of the Child (CRC) of 1989*; and Article 5 of the *Convention on the Rights of Persons with Disabilities (CRPD) of 2007*. States therefore have obligations to protect against environmental harm that results from or contributes to discrimination, to provide for equal access to environmental benefits and to ensure that their actions relating to the environment do not themselves discriminate.

Discrimination may be direct, "when someone is treated less favorably than another person in a similar situation for a reason related to a prohibited ground," or indirect, when facially neutral laws, policies or practices have a disproportionate impact on the exercise of human rights as distinguished by prohibited grounds of discrimination (GC 20, CESCR, 2009, para. 7). In the environmental context, direct discrimination may include, for example, failing to ensure that members of disfavoured groups have the same access as others, to information about environmental matters, to participation in environmental decision-making, or to remedies for environmental harm. According to Article 3(9) of the Aarhus Convention, in the case of transboundary environmental harm, states should provide for equal access to information, participation and remedies without discriminating on the basis of nationality or domicile.

Indirect discrimination may arise, for example, when measures that adversely affect ecosystems, such as mining and logging concessions, have disproportionately severe effects on communities that rely on the ecosystems. Indirect discrimination can also include measures such as authorizing toxic and hazardous facilities in large numbers in communities that are predominantly composed of racial or other minorities, thereby disproportionately interfering with their rights, including their rights to life, health, food and water. Like directly discriminatory measures, such indirect differential treatment is prohibited unless it meets strict requirements of legitimacy, necessity, and proportionality (GC 20, CESCR, 2009, para. 13).

More generally, to address indirect as well as direct discrimination, states must pay attention to historical or persistent prejudice against groups of individuals, recognize that environmental harm can both result from and reinforce existing patterns of discrimination, and take effective measures against the underlying conditions that cause or help to perpetuate

[2] The term "discrimination" as used in the Covenant should be understood to imply "any distinction, exclusion, restriction or preference which is based on any ground such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status, and which has the purpose or effect of nullifying or impairing the recognition, enjoyment or exercise by all persons, on an equal footing, of all rights and freedoms." (GC 18, CCPR, 1989, para. 7).

discrimination (GC 20, CESCR, 2009, para. 8). In addition to complying with their obligations of non-discrimination, states should take additional measures to protect those who are most vulnerable to, or at particular risk from, environmental harm.

Framework Principle 4:
States should provide a safe and enabling environment in which individuals, groups and organs of society that work on human rights or environmental issues can operate free from threats, harassment, intimidation and violence.

Human rights defenders include individuals and groups who strive to protect and promote human rights relating to the environment. Those who work to protect the environment on which the enjoyment of human rights depends are protecting and promoting human rights as well, whether or not they self-identify as human rights defenders. They are among the human rights defenders most at risk, and the risks are particularly acute for indigenous peoples and traditional communities that depend on the natural environment for their subsistence and culture (Knox, 2017a)

Like other human rights defenders, environmental human rights defenders are entitled to all of the rights and protections set out in the *Declaration on the Right and Responsibility of Individuals, Groups and Organs of Society to Promote and Protect Universally Recognized Human Rights and Fundamental Freedoms (Declaration on Human Rights Defenders)*, including the right to be protected in their work and the right to strive for the protection and realization of human rights at the national and international levels. To that end, states must provide a safe and enabling environment for defenders to operate free from threats, harassment, intimidation, and violence. The requirements for such an environment include that states: adopt and implement laws that protect human rights defenders in accordance with international human rights standards; publicly recognize the contributions of human rights defenders to society and ensure that their work is not criminalized or stigmatized; develop, in consultation with human rights defenders, effective programmes for protection and early warning; provide appropriate training for security and law enforcement officials; ensure the prompt and impartial investigation of threats and violations and the prosecution of alleged perpetrators; and provide for effective remedies for violations, including appropriate compensation (Forst, 2016; Sekaggya, 2011, 2013; *Kawas-Fernández v. Honduras*, para. 148; and Article 9 of the Escazú Agreement).

Framework Principle 5:
States should respect and protect the rights to freedom of expression, association and peaceful assembly in relation to environmental matters.

The obligations of states to respect and protect the rights to freedom of expression, association and peaceful assembly encompass the exercise of those rights in relation to environmental matters. States must ensure that these rights are protected whether they are being exercised within structured decision-making procedures or in other forums, such as the news or social media, and whether or not they are being exercised in opposition to policies or projects favoured by the state.

Framework Principle 6:
States should provide for education and public awareness on environmental matters.

States have agreed that the education of the child shall be directed to, among other things, the development of respect for human rights and the natural environment (Article 29 of the CRC). Environmental education should begin early and continue throughout the educational process. It should increase students' understanding of the close relationship between humans and nature, help them to appreciate and enjoy the natural world and strengthen their capacity to respond to environmental challenges.

Increasing the public awareness of environmental matters should continue into adulthood. To ensure that adults as well as children understand environmental effects on their health and well-being, states should make the public aware of the specific environmental risks that affect them and how they may protect themselves from those risks. As part of increasing public awareness, states should build the capacity of the public to understand environmental challenges and policies, so that they may fully exercise their rights to express their views on environmental issues, understand environmental information, including assessments of environmental impacts, participate in decision-making, and where appropriate, seek remedies for violations of their rights. States should tailor environmental education and public awareness programmes to the culture, language and environmental situation of particular populations.

Framework Principle 7:
States should provide public access to environmental information by collecting and disseminating information and by providing affordable, effective and timely access to information to any person upon request.

The human right of all persons to seek, receive and impart information are provided for in Article 19 of the UDHR and Article 19 of the ICCPR, and they include information on environmental matters (see also *Claude-Reyes et al. v Chile*, 2006, para. 76). Public access to environmental information enables individuals to understand how environmental harm may undermine their rights, including the rights to life and health, contributes to the impact assessments described in the following Framework Principle 8, and supports the exercise of other rights, including the rights to expression, association, participation and remedy, as well as the overarching right to a healthy environment.

Access to environmental information has two dimensions. First, states should regularly collect, update and disseminate environmental information, including information about: the quality of the environment, including air and water; pollution, waste, chemicals and other potentially harmful substances introduced into the environment; threatened and actual environmental impacts on human health and well-being; and relevant laws and policies (Guidelines 2, 4 and 5 of the Bali Guidelines; Article 5 of the Aarhus Convention; and Article 6 of the Escazú Agreement). In particular, in situations involving imminent threat of harm to human health or the environment, states must ensure that all information that would enable the public to take protective measures is disseminated immediately to all affected persons, regardless of whether the threats have natural or human causes as noted in Guideline 6 of the Bali Guidelines.

Second, states should provide affordable, effective and timely access to environmental information held by public authorities, upon the request of any person or association, without the need to show a legal or other interest (Article 4 of the Aarhus Convention; and Article 5 of the Escazú Agreement). Grounds for refusal of a request should be set out clearly and construed

narrowly, in light of the public interest in favour of disclosure. According to the Bali Guidelines, states should also provide guidance to the public on how to obtain environmental information (Guidelines 1–3).

Framework Principle 8:
To avoid undertaking or authorizing actions with environmental impacts that interfere with the full enjoyment of human rights, States should require the prior assessment of the possible environmental impacts of proposed projects and policies, including their potential effects on the enjoyment of human rights.

Prior assessment of the possible environmental impacts of proposed projects and policies is called for by international environmental instruments as well as mandated by national laws, for e.g. Principle 17 of the Rio Declaration and Article 14 of the CBD. Human rights bodies have also made clear that prior environmental assessment is required to ensure that proposed actions do not cause environmental harm that violates human rights (GC 15, CESCR, 2002, para. 28; GC 36, CCPR, 2018, para. 62; *Social and Economic Rights Action Center v. Nigeria*, para. 53; *Giacomelli v. Italy*, para. 94; and *Community of San Mateo Huanchor v. Peru*, para. 12).

The key elements of effective environmental assessment are widely understood: the assessment should be undertaken as early as possible in the decision-making process for any proposal that is likely to have significant effects on the environment; the assessment should provide meaningful opportunities for the public to participate, should consider alternatives to the proposal, and should address all potential environmental impacts, including transboundary effects and cumulative effects that may occur as a result of the interaction of the proposal with other activities; the assessment should result in a written report that clearly describes the impacts; and the assessment and the final decision should be subject to review by an independent body. The procedure should also provide for monitoring of the proposal as implemented, to assess its actual impacts and the effectiveness of protective measures (UNEP, 2004).

To protect against interference with the full enjoyment of human rights, the assessment of environmental impacts should also examine the possible effects of the environmental impacts of proposed projects and policies on the enjoyment of all relevant rights, including the rights to life, health, food, water, housing and culture. The assessment procedure itself must comply with human rights obligations, including by providing public information about the assessment and making the assessment and the final decision publicly available, facilitating public participation by those who may be affected by the proposed action, and providing for effective legal remedies.

Business enterprises should conduct human rights impact assessments in accordance with the *United Nations Guiding Principles on Business and Human Rights (2011)*, which provide that businesses "should identify and assess any actual or potential adverse human rights impacts with which they may be involved either through their own activities or as a result of their business relationships", include "meaningful consultation with potentially affected groups and other relevant stakeholders" (Principle 18), "integrate the findings from their impact assessments across relevant internal functions and processes, and take appropriate action" (Principle 19).

Framework Principle 9:
States should provide for and facilitate public participation in decision-making related to the environment, and take the views of the public into account in the decision-making process.

The right of everyone to take part in the government of their country and in the conduct of public affairs (Article 21 of the UDHR; and Article 25 of the ICCPR), includes participation in decision-making related to the environment. Such decision-making includes the development of policies, laws, regulations, projects and activities. Ensuring that these environmental decisions take into account the views of those who are affected by them increases public support, enables deliberative governance and legitimacy of decision-making processes, promotes sustainable development, and helps to protect the enjoyment of rights that depend on a safe, clean, healthy and sustainable environment (see GC 15, CESCR, 2002, paras. 48 and 56; GC 23, CCPR, 1994, para. 7; and *Guerra and Othes v. Italy*, para. 60). Many international environmental instruments recognize the importance of public participation in environmental decision-making, for e.g. Principle 10 of the Rio Declaration; Article 10(1)(d) of the Stockholm Convention; Article 14(1)(a) of the CBD; Article 3(a) of the UNCCD; and Article 6(a) of the UNFCCC. Again, Articles 1 and 6–8 of the Aarhus Convention, and Articles 1 and 7 of the Escazú Agreement, have detailed requirements which tie directly to the human right to a healthy environment.

According to the Bali Guidelines, to be effective, public participation must be open to all members of the public who may be affected and occur early in the decision-making process. States must provide members of the public with an adequate opportunity to express their views and take additional steps to facilitate the participation of women and of members of marginalized communities. States must ensure that the relevant authorities take into account the expressed views of the public in making their final decisions, that they explain the justifications for the decisions and that the decisions and explanations are made public (Guideline 11).

Framework Principle 10:
States should provide for access to effective remedies for violations of human rights and domestic laws relating to the environment.

The obligations of states to provide for access to judicial and other procedures for effective remedies for violations of human rights (Article 8 of the UDHR; Article 2(3) of the ICCPR; and Principle 10 of the Rio Declaration), encompass remedies for violations of human rights relating to the environment (GC 12, CESCR, 1999, para. 32; GC 15, CESCR, 2002, para. 55; *Portillo Cáceres and Others v. Paraguay*; and *Socio-Economic Rights and Accountability Project (SERAP) v. Nigeria*). In addition, in connection with the obligations to establish, maintain and enforce substantive environmental standards, as stated in the Framework Principles 11 and 12), each state should ensure that individuals have access to effective remedies against private actors, as well as government authorities, for failures to comply with the laws of the state relating to the environment (Guideline 17 of the Bali Guidelines).

To provide for effective remedies, states should ensure that individuals have access to judicial and administrative procedures that meet basic requirements, including that the procedures: (a) are impartial, independent, affordable, transparent and fair; (b) review claims in a timely manner; (c) have the necessary expertise and resources; (d) incorporate a right of appeal to a higher body; and (e) issue binding decisions, including for interim measures, compensation,

restitution and reparation, as necessary to provide effective remedies for violations. The procedures should be available for claims of imminent and foreseeable as well as past and current violations. States should ensure that decisions are made public and that they are promptly and effectively enforced.

States should provide guidance to the public about how to seek access to these procedures and should help to overcome obstacles to access such as language, illiteracy, expense and distance, as well as technological barriers (e.g. with respect to information and procedures that are available online). Standing should be construed broadly, and states should recognize the standing of Indigenous Peoples and other communal landowners to bring claims for violations of their collective rights. All those pursuing remedies must be protected against reprisals, including threats and violence. States should protect against baseless lawsuits aimed at intimidating victims and discouraging them from pursuing remedies.

Framework Principle 11:
States should establish and maintain substantive environmental standards that are non-discriminatory, non-retrogressive and otherwise respect, protect and fulfil human rights.

To protect against environmental harm and to take necessary measures for the full realization of human rights that depend on the environment, states must establish, maintain and enforce effective legal and institutional frameworks for the enjoyment of a safe, clean, healthy and sustainable environment (see Rio Declaration, 1992, Principle 11; GC 36, CCPR, 2018, paras. 7, 26, 62; GC 15, CESCR, 2002, paras. 8 and 19; GC 16, Committee on the Rights of the Child, 2013a, paras. 29 and 49; *Portillo Cáceres and Others v. Paraguay*, para. 7.3; *Social and Economic Rights Action Centre v. Nigeria*; *Öneryildiz v. Turkey*). Such frameworks should include substantive environmental standards, including with respect to air quality, the global climate, freshwater quality, marine pollution, waste, toxic substances, protected areas, conservation and biological diversity.

Ideally, environmental standards would be set and implemented at levels that would prevent all environmental harm from human sources and ensure a safe, clean, healthy and sustainable environment. However, limited resources may prevent the immediate realization of the rights to health, food, water and other economic, social and cultural rights. The obligation of states to achieve progressively the full realization of these rights by all appropriate means, as provided in Article 2(1) of the ICCPR, requires states to take deliberate, concrete and targeted measures towards that goal, but states have some discretion in deciding which means are appropriate in light of available resources (GC 3, CESCR, 1990). Similarly, human rights bodies applying civil and political rights, such as the rights to life and to private and family life, have held that states have some discretion to determine appropriate levels of environmental protection, taking into account the need to balance the goal of preventing all environmental harm with other social goals (see *Hatton and Others v. United Kingdom*, 2003, para. 98). Over time, environmental protection is not in conflict with economic development, because sustainable development is possible only with strong environmental protection. Nevertheless, states still have discretion as to how to best allocate scarce resources in particular instances while they strive for the full realization of all human rights. As an example, in Principle 11 of the Rio Declaration it states:

> Environmental standards, management objectives and priorities should reflect the environmental and developmental context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries.

This discretion is not unlimited. One constraint is that decisions as to the establishment and implementation of appropriate levels of environmental protection must always comply with obligations of non-discrimination. Another constraint is the strong presumption against retrogressive measures in relation to the progressive realization of economic, social and cultural rights (GC 3, CESCR, 1990, para. 9). Other factors that should be taken into account in assessing whether environmental standards otherwise respect, promote and fulfil human rights include the following:

- The standards should result from a procedure that itself complies with human rights obligations, including those relating to the rights of freedom of expression, freedom of association and peaceful assembly, information, participation and remedy, in accordance with Framework Principles 4–10.
- The standards should take into account, and to the extent possible, be consistent with all relevant international environmental, health and safety standards, such as those promulgated by the World Health Organization (WHO).
- The standards should take into account the best available science. However, the lack of full scientific certainty should not be used to justify postponing effective and proportionate measures to prevent environmental harm, especially when there are threats of serious or irreversible damage (Principle 15 of the Rio Declaration). States should take precautionary measures to protect against such harm.
- The standards must comply with any applicable specific human rights obligations. For example, in all actions concerning children, the best interests of the child must be a primary consideration (Article 3(1) of the CRC).
- Finally, the standards must not strike an unjustifiable or unreasonable balance between environmental protection and other social goals in light of their effects on the full enjoyment of human rights.[3]

Framework Principle 12:
States should ensure the effective enforcement of their environmental standards against public and private actors.

Governmental authorities must comply with the relevant environmental standards in their own operations, and they must also monitor and effectively enforce compliance with the standards by preventing, investigating, punishing, and redressing violations of the standards by private actors as well as governmental authorities. In particular, states must regulate business enterprises to protect against human rights abuses resulting from environmental harm and to provide for remedies for such abuses (Principles 1 and 25 of the United Nations Guiding Principles on Business and Human Rights; GC 16, Committee on the Rights of the Child, 2013a, para. 61; GC 15, CESCR, 2011, para. 1). States should implement training programmes for law enforcement and judicial officers to enable them to understand and enforce environmental

[3] For example, a decision to allow massive oil pollution in the pursuit of economic development could not be considered reasonable in light of its disastrous effects on the enjoyment of the rights to life, health, food and water in *Social and Economic Rights Action Centre v. Nigeria*, 2002).

laws, and they should take effective steps to prevent corruption from undermining the implementation and enforcement of environmental laws.

In accordance with the *United Nations Guiding Principles on Business and Human Rights*, the responsibility of business enterprises to respect human rights includes the responsibility to avoid causing or contributing to adverse human rights impacts through environmental harm, to address such impacts when they occur and to seek to prevent or mitigate adverse human rights impacts that are directly linked to their operations, products or services by their business relationships (Principles 11 and 13). Businesses should comply with all applicable environmental laws, issue clear policy commitments to meet their responsibility to respect human rights through environmental protection, implement human rights due diligence processes (including human rights impact assessments) to identify, prevent, mitigate and account for how they address their environmental impacts on human rights, and enable the remediation of any adverse environmental human rights impacts they cause or to which they contribute (Principles 15–24).

Framework Principle 13:
States should cooperate with each other to establish, maintain and enforce effective international legal frameworks in order to prevent, reduce and remedy transboundary and global environmental harm that interferes with the full enjoyment of human rights.

The obligations of states to cooperate to achieve universal respect for, and observance of, human rights require them to work together to address transboundary and global threats to human rights (see Articles 55–56 of the UN Charter; and Article 2(1) of the ICCPR). Moreover, every state has obligations in relation to actions within its own territory or control that cause transboundary environmental harm to human rights (IACtHR, 2017). Transboundary and global environmental harm can have severe effects on the full enjoyment of human rights, and international cooperation is necessary to address such harm.

The obligation of international cooperation does not require every state to take exactly the same actions. The responsibilities that are necessary and appropriate for each state will depend in part on its situation, and agreements between states to address global problems, such as climate change, may appropriately tailor their individual commitments to take account of their respective capabilities and challenges (see Boyd, 2019c; Knox, 2016, paras. 46–48; *Netherlands v. Urgenda*, paras. 6.2–6.5). Once their obligations have been defined, however, states must comply with them in good faith.

Framework Principle 14:
States should take additional measures to protect the rights of those who are most vulnerable to, or at particular risk from, environmental harm, taking into account their needs, risks and capacities.

As the Human Rights Council has recognized in their resolution on *Human Rights and the Environment (Res/34/20) of 2017*, "while the human rights implications of environmental damage are felt by individuals and communities around the world, the consequences are felt most acutely by those segments of the population that are already in vulnerable situations" (Preamble, para. 13).[4] Persons may be vulnerable because they are unusually susceptible to certain types of environmental harm, or because they are denied their human rights, or both.

[4] Many human rights instruments set out specific obligations relevant to those whose rights are often denied or who are otherwise in vulnerable situations, for e.g. Article 27 of the ICCPR (1966); ICERD, (1965); CEDAW (1979); CRC (1989); CRPD (2007); and UNDRIP (2007).

Those who are at greater risk from environmental harm for either or both reasons often include women, children, persons living in poverty, members of Indigenous Peoples and traditional communities, older persons, persons with disabilities, ethnic, racial or other minorities and displaced persons.[5]

To protect the rights of those who are particularly vulnerable to or at risk from environmental harm, states should ensure that their laws and policies take into account the ways that some parts of the population are more susceptible to environmental harm, and the barriers some face to exercising their human rights related to the environment.

For example, states should develop disaggregated data on the specific effects of environmental harm on different segments of the population, conducting additional research as necessary, to provide a basis for ensuring that their laws and policies adequately protect against such harm. States should take effective measures to raise the awareness of environmental threats among those persons who are most at risk. In monitoring and reporting on environmental issues, states should provide detailed information on the threats to, and status of, the most vulnerable. Assessments of the environmental and human rights impacts of proposed projects and policies must include a careful examination of the impacts on the most vulnerable, in particular.

Domestic and international environmental standards should be set at levels that protect against harm to vulnerable segments of the population, and states should use appropriate indicators and benchmarks to assess implementation. When measures to safeguard against or mitigate adverse impacts are impossible or ineffective, states must facilitate access to effective remedies for violations and abuses of the rights of those most vulnerable to environmental harm.

Framework Principle 15:
States should ensure that they comply with their obligations to Indigenous Peoples and members of traditional communities.

Specific obligations include: (a) recognizing and protecting their rights to the lands, territories and resources that they have traditionally owned, occupied or used; (b) consulting with them and obtaining their free, prior and informed consent before relocating them or taking or approving any other measures that may affect their lands, territories or resources; (c) respecting and protecting their traditional knowledge and practices in relation to the conservation and sustainable use of their lands, territories and resources; and (d) ensuring that they fairly and equitably share the benefits from activities relating to their lands, territories or resources.

Framework Principle 16:
States should respect, protect and fulfil human rights in the actions they take to address environmental challenges and pursue sustainable development.

The obligations of states to respect, protect and fulfil human rights apply when states are adopting and implementing measures to address environmental challenges and to pursue sustainable development. That a state is attempting to prevent, reduce or remedy environmental harm, seeking to achieve one or more of the Sustainable Development Goals (SDGs), or taking actions in response to climate change does not excuse it from complying with its human rights obligations. These obligations apply to the measures through which

[5] Many persons are vulnerable or subject to discrimination along more than one dimension, such as disabled children and Indigenous women.

environmental protection is achieved as well as to the decisions about which levels of environmental protection to pursue. As provided in the Paris Agreement, when taking actions in response to climate change, such as pursuing adaptation measures or renewable energy projects, states must comply with their human rights obligations (Preamble, para. 11).

2.5. Relevance for national legislation on natural resources

Those involved in designing or revising legal frameworks for agricultural development and the management of renewable natural resources, ranging from land, water, fisheries, plants and animals to food, forestry, wildlife, biodiversity and trade laws should pay close attention to the *United Nations Framework Principles on Human Rights and the Environment*. This is also the case for those providing advice on regulatory aspects related to climate change, gender equality, agribusiness operations, the right to food, the right to water and the prevention of potential conflicts arising from the competition for natural resources. In all these activities, legal advice can rely systematically on the Framework Principles with a view to:

- Ensuring that legislation on natural resources is non-discriminatory and non-retrogressive, taking into account the internationally protected human rights that may depend on the sustainable use and conservation of particular natural resources and relevant international environmental obligations.
- Integrating consideration of Indigenous Peoples' rights, women's rights, children's best interests, and the rights of environmental human rights defenders in the governance of natural resources.
- Establishing clear duties for public authorities to plan, regulate and monitor private actors' activities in the natural resource-related sectors that may have negative impacts on the environment and on human rights in ways that enhance access to justice.
- Creating clear obligations for private actors to consider relevant human rights in their proposals and activities in the natural resource sector.
- Generally clarifying which international environmental obligations and standards require to be enshrined in national law (as opposed to policy or administrative instruments), to ensure respect and protection of human rights, including with a view to enhancing access to justice and effective remedies.

In addition, legal advice on national legislation on natural resources can rely on the synergies (and potential for policy coherence) between human rights and the ecosystem approach, which can be considered as the landmark regulatory strategy for the *United Nations Convention on Biological Diversity (CBD)* and other biodiversity-related conventions (Morgera, 2017).

The ecosystem approach concerns *integration*: it is aimed at integrating the management of land, water and living resources, as well as balancing the three objectives of the Convention – conservation, sustainable use, together with access and benefit-sharing (*CBD COP Decision V/6*). Hence, this approach fundamentally challenges the long-embedded sectoral and fragmented

approach to environmental law-making and implementation at national and international levels, and through that can support the consideration of human rights across different government sectors that may not typically engage with these matters.

- The ecosystem approach aims to integrate modern science and the traditional knowledge of Indigenous Peoples and local communities in adaptive management, which provides an opportunity to engage with the human rights of these groups (as discussed below).

- Another key dimension of this approach is its emphasis on *equity*, recognizing that human beings and their cultural diversity are an integral component of many ecosystems. From this perspective, the ecosystem approach entails a decentralized, social process. It underscores the need for understanding and factoring in societal choices, rights and interests of Indigenous Peoples and local communities, along with intrinsic as well as tangible and intangible values attached to biodiversity, ultimately leading to a balance between local interests and the wider public interest. It also points to the challenge of ensuring appropriate representation of community interests in the decision-making process. This is expected to enhance the responsibility, ownership, accountability and participation of different stakeholders in achieving the Convention's objectives and facilitating the use of local knowledge. From a normative perspective, the ecosystem approach should thus be understood as a consensus-building process, which requires good-faith efforts and a considerable investment of time and resources (*CBD COP Decision VII/11*). This provides an entry point for the integration of procedural human rights into natural resource legislation. And in effect CBD Parties already agreed that ensuring equity in protected areas' governance, for instance entails appropriate mechanisms for the full and effective participation of Indigenous Peoples and local communities; to transparency and accountability; and fair dispute or conflict resolution (*CBD COP Decision XIV/8,* Annex II).

- Equity also provides an entry point for the consideration of substantive human rights in decision-making and management. For instance, CBD Parties already agreed that ensuring equity in protected areas' governance entails appropriate mechanisms for ensuring gender equality in the establishment, governance, planning, monitoring and reporting of protected and conserved areas on their traditional territories (lands and waters), and the recognition of customary tenure and governance systems of Indigenous Peoples and local communities (*CBD COP Decision XIV/8,* Annex II).

- Furthermore, as our knowledge of ecosystem functioning is incomplete, the ecosystem approach is tightly linked with precaution: it is predicated on the application of appropriate scientific methodologies and on the adoption of adaptive management to deal with the complex and dynamic nature of ecosystems. It also calls for a prudent approach in respecting the limits of ecosystem functioning (*CBD COP Decision V/6*, paras. 2, 4 and 6), thereby calling for a cautious approach to natural resource management based on continuous learning of the environment's vulnerability, the

> limitations of science, the availability of alternatives and the need for long-term, holistic environmental considerations (Burns, 2007), which is also relevant to understand "foreseeable" human rights impacts that national authorities should avoid (Knox, 2017b).

International and national legal experts involved in conducting and promoting research on legislative developments in the food and agriculture sector and in renewable natural resource management, including comparative studies (e.g. FAO Legislative studies, Legal guides, Legal papers, and Legal briefs),[6] have an opportunity to raise awareness among, and build the capacity of, national law-makers and other authorities and experts usually involved in the review and reform of national legislation on natural resources to integrate the Framework Principles into their work, as well as to highlight legislative trends that already support these Principles.

Finally, international and national legal experts supporting the development of international treaties and other norm-setting instruments on natural resources, should, in accordance with Framework Principle 16, support states in respecting, protecting and fulfilling human rights in the actions they take to address environmental challenges and pursue sustainable development. This Principle should also be upheld during international standard-setting activities like those of the Codex Alimentarius Commission[7] and the Commission on Phytosanitary Measures (CPM)[8] as well as during negotiations with donors and for the delivery of programmes and fostering partnerships towards the realization of the SDGs.

[6] See FAO Legal Library at https://www.fao.org/legal-services/library/library/en/
[7] For information on Codex Alimentarius and the Commission see www.fao.org/fao-who-codexalimentarius/en
[8] For information on the International Plant Protection Convention and the Commission see www.ippc.int/en

3. Conservation of nature and the rights of Indigenous Peoples and other rural rights holders

The importance of a healthy environment for the enjoyment of human rights has become widely recognized, as explained in the previous section. However, the relationship between human rights and the conservation of natural ecosystems and biological diversity may be less well understood. In two reports on biodiversity and human rights, the previous and current Special Rapporteurs on human rights and the environment have outlined the relationship between the two areas, with a particular emphasis on the rights of Indigenous Peoples and other rural rights holders (Knox, 2017b; Boyd, 2020).[9] This section draws on those reports, and also addresses the *Voluntary Guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security (VGGT)*.

3.1. General considerations with respect to biodiversity and human rights

3.1.1. The dependence of human rights on biodiversity

The full enjoyment of human rights, including the rights to life, health, food and water, depends on the services provided by ecosystems. The provision of ecosystem services depends on the health and sustainability of ecosystems, which in turn depend on biodiversity. The full enjoyment of human rights thus depends on biodiversity, and the degradation and loss of biodiversity undermine the ability of human beings to enjoy their human rights.

Ecosystem services include provisioning services such as food, water, timber and fibre, which are necessary for basic material needs, including nutrition, shelter and clothing. Regulating services such as purification of water and protection against erosion support clean water and human health. Ecosystems also provide vital cultural services to the many people around the world whose religious and spiritual values are rooted in nature (Millennium Ecosystem Assessment, 2005). Human economic and social development depends on the use of ecosystems, but this development cannot overexploit natural ecosystems and destroy the services on which we depend. Development must be sustainable, and sustainable development requires healthy ecosystems. In SDG 15, states have committed to "protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss."

Ecosystem services are of incalculable benefit. In the words of Special Rapporteur David R. Boyd's 2020 report to the General Assembly:

> All human rights ultimately depend on a healthy biosphere. Without healthy, functioning ecosystems, which depend on healthy biodiversity, there would be

[9] In Boyd and Keene (2021), the term "Indigenous Peoples and other rural rights holders" refers to Indigenous Peoples, Afro-descendants, local communities, peasants, rural women, and rural youth.

> no clean air to breathe, safe water to drink or nutritious food to eat (Boyd, 2020, paras. 3–4).

One of the most striking specific examples of human reliance on biodiversity is as a source of medicine. The oldest known natural mummy, found in the Italian Alps in 1991 after being frozen for more than 5 000 years, carried *Piptoporus betulinus*, a birch fungus that reduces inflammation. Famous recent examples include: *Cinchona officinalis*, a South American tree whose bark produces quinine, a treatment for malaria; *Catharanthus roseus*, the Madagascar rosy periwinkle, first used as a traditional medicine and then as the basis for successful treatments of childhood leukemia and Hodgkin's lymphoma; *Penicillium citrinum*, a fungus whose derivation reduces cholesterol synthesis; and *Digitalis purpurea*, the purple foxglove, used to treat heart disease. More than half of the 1 355 drugs approved by the United States Food and Drug Administration between 1981 and 2010 had natural origins. The debt to nature is particularly great with respect to antibiotics, which have saved millions of lives: 10 of the 14 major classes of antibiotics are derived from microorganisms.

Only a small fraction of the hundreds of thousands of plant species have been studied for their medicinal potential, and other living resources, including the marine and the microbial, remain almost completely unexamined. As many as 40 percent of the approximately 60 000 plant species thought to be used for medicinal purposes are endangered, including plants long important in traditional medicine such as the African cherry (*Prunus Africana*) and the Himalayan yew (*Taxus wallichianai*).

Other ways that biodiversity supports human health may be less widely recognized. For example, the development of normal immune responses, especially to allergens, requires exposure to diverse natural habitats. As biodiversity declines, it causes autoimmune diseases, allergic disorders and other non-communicable inflammatory diseases to become more prevalent in all parts of the world (Haahtela *et al*., 2013). Moreover, for some zoonotic diseases, the loss of biodiversity has been linked to increased prevalence in humans. In his 2020 report, David R. Boyd stated that:

> more than 70 percent of emerging infectious diseases in recent decades have been zoonoses, including HIV/AIDS, Ebola, severe acute respiratory syndrome, Middle East respiratory syndrome, avian influenza, Nipah virus, Marburg virus, Zika virus and West Nile virus (Boyd, 2020, para. 11).

More generally, it is increasingly clear that exposure to nature has beneficial effects on mental health. A comprehensive review of studies concluded that:

> experiencing nature can have positive effects on mental/psychological health, healing, heart rate, concentration, levels of stress, blood pressure, behavior, and other health factors. For example, viewing nature, even through a window, improves recovery from surgery (Sandifer, Sutton-Grier and Ward, 2015, p. 3).

The benefits of biodiversity are particularly critical in relation to the right to food. Genetic diversity within species increases the yield of commercial crops, and species richness in freshwater fisheries is associated with greater productivity (Harrison *et al*., 2014). Biodiversity is crucial to the stability and resilience of food sources. Increasing diversity of fish species is associated with greater stability of fisheries (Cardinale *et al*., 2012), and "resiliency in agroecosystems to environmental change depends on the innate attributes of crop varieties, which makes preserving crop biodiversity [e.g. through seed banks] a vital part of food security" (Bernstein, 2014, p. 158).

Food security also depends on the biodiversity of the surrounding environment:

> Successfully raising any single crop requires more than its seeds; a multitude of species are necessary, from microbes, insects, worms, and small vertebrates in the soil to a host of species above ground that control pests, fertilize soils, and pollinate flowers. Marked population declines have been observed in organisms vital to agriculture in recent years, and these losses bear directly on food security (Bernstein, 2014, p. 158).

For example, pollination is necessary for more than three quarters of the 107 leading global food crops, including many fruits and vegetables that are important sources of micronutrients and vitamins (IPBES, 2016, pp. 8 and 16; WHO and CBD Secretariat, 2015, p. 81). Biodiversity loss is also directly related to climate change, as described in more detail below.

3.1.2. States' general obligations to protect biodiversity

States' obligations to protect the environment in order to protect the full enjoyment of human rights, as described in the previous section on the Framework Principles, apply to protection of natural ecosystems and biodiversity.

In his 2020 report, Special Rapporteur David R. Boyd stated that:

States have procedural obligations to:

a. Provide the public with accessible, affordable and understandable information regarding the causes and consequences of the global nature emergency, including incorporating the importance of a healthy biosphere as a required element of the educational curriculum at all levels;

b. Ensure an inclusive, equitable and gender-based approach to public participation in all actions related to the conservation, protection, restoration and sustainable use of nature, with a particular emphasis on empowering the most directly affected populations;

c. Enable affordable and timely access to justice and effective remedies for all, to hold States and businesses accountable for fulfilling their obligations to conserve, protect and restore nature;

d. Assess the potential environmental, social, cultural and human rights impacts of all plans, policies and proposals that could damage, destroy or diminish healthy ecosystems and biodiversity;

e. Implement human rights safeguards in the design and use of biodiversity financing mechanisms (e.g. payments for ecosystem services and debt for nature swaps);

f. Integrate gender equality into all actions to conserve, protect, restore, use and equitably share the benefits of nature, including the development and implementation of National Biodiversity Strategic Action Plans required under the Convention on Biological Diversity, empowering women to play leadership roles;

g. Respect the rights of Indigenous Peoples and local communities and peasants in all actions to conserve, protect, restore, sustainably use and equitably share the benefits of healthy ecosystems and biodiversity, including respect for traditional knowledge, customary practices and Indigenous Peoples' right to free, prior and informed consent;

h. Provide strong protection for environmental human rights defenders working on nature-related issues. States must vigilantly protect defenders from intimidation, criminalization and violence; diligently investigate, prosecute and punish the perpetrators of those crimes; and address the root causes of social-environmental conflict (Boyd, 2020, para. 69).

For example, before a state grants a concession for exploitation of a forest, authorizes a dam on a river or takes other steps that allow the degradation or loss of biodiversity, it should assess the environmental and social impacts of the proposal, provide information about its possible effects, facilitate informed public participation in the decision-making process, including by protecting the rights of freedom of expression and association, and provide access to effective legal remedies for those who claim that their rights have been violated. The state should also safeguard the rights of Indigenous Peoples, as described below in further detail.

States have developed some exemplary practices in relation to procedural obligations. At the international level, a particularly important development in relation to the duty to provide information was the creation in 2012 of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES). The IPBES has issued high-quality, peer-reviewed reports, including a comprehensive global assessment of the state of nature in 2019.

However, there are also many failures to meet procedural obligations in relation to biodiversity. Perhaps the most egregious problem is the failure to protect environmental human rights defenders (Forst, 2016).[10] In recent years, the human rights organization Global Witness has issued an annual report on the number of environmental and land defenders killed because of their work. Its most recent report, in 2020, stated that 212 defenders were murdered in 2019 (Global Witness, 2020). Many others are harassed and subjected to violence. As pressures to exploit natural resources grow, those who oppose unsustainable exploitation are increasingly under attack. Sometimes, government actors themselves commit or are complicit in the persecution. Even when they are not directly involved, governments often fail to respond to threats, investigate violations and arrest those responsible, thereby creating a culture of impunity that encourages further attacks. Moreover, states have adopted laws that criminalize peaceful protests and opposition, restrict or prohibit the operations of civil society organizations and enable civil suits that seek to intimidate and silence environmental defenders.

Substantively, states are collctively failing to meet their obligations to protect human rights from the loss of natural ecosystems. In his 2020 report to the United Nations General Assembly, Special Rapporteur David R. Boyd summarized some of the findings of the 2019 IPBES comprehensive assessment:

a. Wildlife populations (including amphibians, birds, fish and mammals) have plummeted an average of 60 percent since 1970;

[10] A number of recent reports have called attention to the threats facing environmental human rights defenders, including a report by the Special Rapporteur on human rights defenders (see Forst, 2016).

b. The rate of extinction is hundreds of times higher than the average over the past 10 million years and is accelerating, with 1 million species at risk;

c. Nearly three quarters of the Earth's land surface has been altered significantly;

d. Two thirds of the Earth's ocean realm is experiencing adverse impacts, including acidification, deoxygenation and a loss of sea ice;

e. More than half of the world's accessible freshwater flows is appropriated for human use;

f. More than 85 percent of the planet's wetlands has been destroyed;

g. 420 million hectares of forest have been lost since 1990 through conversion to other land uses;

h. The global biomass of large predatory fish targeted by fisheries has fallen by two thirds over the past hundred years (Boyd, 2020, para. 13).

Although states have adopted hundreds of laws and treaties designed to protect nature, including the CBD, there is an enormous gap between the protections called for in these laws and their actual implementation. In 2010, the parties to the CBD in *Decision X/2* adopted 20 conservation goals called the *Aichi Biodiversity Targets*, to be met by 2020. In 2020, the CBD Secretariat reported that none of the Aichi Targets had been fully met, and only six had been partially met (CBD Secretariat, 2020).

For example, Aichi Target 5 stated:

> By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced (p. 8).

The Secretariat reported that the rate of deforestation was only about one-third lower in 2010-2020 than in the previous decade. Loss, degradation and fragmentation of habitats remain high in forest and other biomes, and wilderness areas and global wetlands continue to decline (CBD Secretariat, 2020, p. 7).

Aichi Target 12 stated:

> 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 (Annex, p. 9).

In its 2020 report, the CBD Secretariat stated that:

> Species continue to move, on average, closer to extinction… Among well-assessed taxonomic groups, nearly one quarter (23.7%) of species are threatened with extinction unless the drivers of biodiversity loss are drastically reduced, with an estimated total of one million threatened species across all groups. Wild animal populations have fallen by more than two-thirds since 1970, and have continued to decline since 2010 (CBD Secretariat, 2020, p. 9).

In his 2020 report, David R. Boyd emphasized that:

> States must not violate the right to a healthy environment or other human rights related to healthy ecosystems and biodiversity through their own actions; must protect those rights from being violated by third parties, in particular businesses; and must establish, implement and enforce laws, policies and programmes to fulfil these rights (Boyd, 2020, para. 70).

States also have obligations to:

> …cooperate internationally to achieve a healthy biosphere, through sharing information, transferring clean technologies, building capacity, increasing research, honoring international commitments and ensuring just and sustainable outcomes for vulnerable and marginalized communities. Wealthy States must contribute their fair share towards the costs of conserving, protecting and restoring healthy ecosystems and biodiversity in low-income countries, in accordance with the principle of common but differentiated responsibilities (Boyd, 2020, para. 74).

3.2. Rights of Indigenous Peoples and rural communities in relation to conservation

Although the global failure to protect biodiversity ultimately affects everyone, it is already having catastrophic consequences for Indigenous Peoples and other rural communities who depend directly on ecosystems for their food, water, fuel and culture. This section describes some of their most important rights and states' corresponding obligations in the environmental context. Within these groups, there are also specific impacts on rural women and children; that are addressed in the following sub-sections.

The rights of Indigenous Peoples are recognized in international instruments, including the *United Nations Declaration on the Rights of Indigenous Peoples of 2007* and the *Indigenous and Tribal Peoples Convention of 1989 (ILO Convention 169)*, and they have been clarified by international and regional human rights bodies.

While there is no universal definition of Indigenous Peoples, the ILO Convention 169 provides a set of subjective and objective criteria, which are jointly applied to identify Indigenous Peoples in a given country. Given the diversity of the peoples it aims at protecting, the Convention uses the terminology of "indigenous and tribal" peoples in an inclusive manner, with a view to ascribing the same set of rights to both groups. In Latin America, for example, the term "tribal" has been applied to certain afro-descendant communities (ILO, 2013; *Saramaka People v. Suriname*). In some cases, where there has been a lack of clarity about the application of the subjective and objective criteria, the ILO Committee of Experts on the Application of Conventions and Recommendations (CEACR) has analysed the circumstances and provided comments to the country concerned (ILO, 2013). This can be the case of countries where Indigenous and tribal peoples are often known by national terms such as adivasis, mountain dwellers, hill tribes and hunter-gatherers.

Human rights bodies have emphasized that states should protect the special relationship of peoples and communities with the territory that they have traditionally occupied, especially when their subsistence and culture is closely linked to that territory. For example, the Inter-American Court of Human Rights has held in *Saramaka People v. Suriname (2007)* that states

have heightened obligations to protect the right to property, as recognized in the *American Convention on Human Rights of 1969* (Article 21), of Afro-descendant tribal communities. Because such communities have their own customs and a special relationship with their ancestral territories, the Court held that, like Indigenous Peoples, they "require special measures that guarantee the full exercise of their rights, particularly with regards to their enjoyment of property rights, in order to safeguard their physical and cultural survival" (para. 85).

Along with the ILO Convention 169 and the UNDRIP, other instruments guarantee the legal protection of Indigenous Peoples and other rural communities in environmental matters. In its provisions, the CBD also refers to "local communities" that hold traditional knowledge and engage in customary sustainable use of living resources (Articles 8(j) and 10(c)), while the Framework Principles also refer to "traditional communities" to point to the human rights of communities that do not self-identify as Indigenous but have close relationships to their ancestral territories and depend directly on nature for their material needs and cultural life. In addition, the *United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas of 2018 (UNDROP)* covers any person who "seeks to engage alone, or in association with others or as a community" in small-scale agricultural production, crop planting, livestock raising, pastoralism, fishing, forestry, hunting or gathering, and handicrafts related to agriculture or a "related occupation in a rural area…for subsistence or for the market". In addition, UNDROP sets out two parameters for understanding the concept of "peasants": (i) reliance on family labour or other non-monetized way of organizing labour; and (ii) special dependency on and attachment to the land (Article 1.1).

Article 27 of the ICCPR provides that:

> persons belonging to [ethnic, religious or linguistic] minorities shall not be denied the right, in community with the other members of their group, to enjoy their own culture, to profess and practice their own religion, or to use their own language.

The Human Rights Committee charged with monitoring the Covenant has stated that "culture manifests itself in many forms, including a particular way of life associated with the use of land resources, especially in the case of indigenous peoples", and that the enjoyment of rights to traditional activities, such as hunting and fishing, may require "positive legal measures of protection and measures to ensure the effective participation of members of minority communities in decisions which affect them" (GC 23, CCPR, 1994, para. 7). Whether measures that substantially interfere with the culturally significant economic activities of a minority community are acceptable depends on whether the members of the community were able to participate in the decision-making process that resulted in the measures and whether they will continue to benefit from their traditional economy. The Committee in their communication on *Poma Poma v. Peru* has stated that:

> participation in the decision-making process must be effective, which requires not mere consultation but the free, prior and informed consent of the members of the community. In addition, the measures must respect the principle of proportionality so as not to endanger the very survival of the community and its members (paras. 7.3–7.6).

Among the obligations of states to Indigenous Peoples and local communities, four are particularly important in the environmental context.

First, as provided in Articles 14–15 of the ILO Convention 169, states must recognize and protect the rights of Indigenous Peoples and local communities to the lands, territories and resources that they have traditionally owned, occupied or used, including those to which they have had access for their subsistence and traditional activities, (see also Articles 26–27 of the UNDRIP). According to the Convention, the recognition of the rights must be conducted with due respect for the customs, traditions and land tenure systems of the peoples or communities concerned, as stated in (Article 26(3)). Even without formal recognition of property rights and delimitation and demarcation of boundaries, states must protect against actions that might affect the value, use or enjoyment of the lands, territories or resources, including by instituting adequate penalties against those who intrude on or use them without authorization (Article 18).

Second, states must ensure the full and effective participation of Indigenous Peoples and local communities in decision-making on the entire spectrum of matters that affect their lives. States have obligations to consult with them when considering legislative or administrative measures which may affect them directly, before undertaking or permitting any programmes for the exploration or exploitation of resources pertaining to their lands or territories and when considering their capacity to alienate their lands or territories or otherwise transfer their rights outside their own community (Articles 6, 15 and 17). States should assess the environmental and social impacts of proposed measures and ensure that all relevant information is provided to them in understandable and accessible forms. Consultations with Indigenous Peoples and local communities should be in accordance with their customs and traditions and occur early in the decision-making process.

The free, prior and informed consent of Indigenous Peoples and local communities is generally necessary before the adoption or implementation of any laws, policies or measures that may affect them, and in particular before the approval of any project affecting their lands, territories or resources, including the extraction or exploitation of mineral, water or other resources, or the storage or disposal of hazardous materials (Articles 19, 29(2) and 32 of the UNDRIP; *Poma Poma v. Peru*, paras. 7.3–7.6; and Articles 6–7 of the Nagoya Protocol). Relocation of Indigenous Peoples and local communities may take place only with their free, prior and informed consent and after agreement on just and fair compensation and, where possible, with the option of return (Article 16 of the ILO Convention 169; and Article 10 of the UNDRIP).

Third, states should respect and protect the knowledge and practices of Indigenous Peoples and local communities in relation to the conservation and sustainable use of their lands, territories and resources, as stated in Articles 8(j) and 10(c) of the CBD. Indigenous Peoples and local communities have the right to the conservation and protection of the environment and the productive capacity of their lands, territories and resources, and to receive assistance from states for such conservation and protection. States must comply with the obligations of consultation and consent with respect to the establishment and maintenance of protected areas in the lands and territories of Indigenous Peoples and local communities and ensure that they can participate fully and effectively in the governance of such protected areas (Article 15(1) of the ILO Convention 169; *African Commission on Human and Peoples' Rights v. Kenya*; and *Kaliña and Lokono Peoples v. Suriname*).

Fourth, states must ensure that Indigenous Peoples and local communities affected by extraction activities, i.e. the use of their traditional knowledge and genetic resources, or other activities in relation to their lands, territories or resources, fairly and equitably share the benefits arising from such activities (Article 15(2) of the ILO Convention 169; Article 8(j) of the CBD; Article 5 of the Nagoya Protocol; and Article 16(g) of the UNCCD). Consultation procedures

should establish the benefits that the affected Indigenous Peoples and local communities are to receive, in a manner consistent with their own priorities. Finally, as provided in the UNDRIP, states must provide for effective remedies for violations of their rights, and just and fair redress for harm resulting from any activities affecting their lands, territories or resources (Article 32(3)). They have the right to restitution or, if this is not possible, just, fair and equitable compensation for their lands, territories and resources that have been taken, used or damaged without their free, prior and informed consent (Article 32(3)).

These obligations apply not only to measures aimed at exploitation of resources, but also to those aimed at conservation. The Special Rapporteur on the rights of Indigenous Peoples, Victoria Tauli-Corpuz, has identified many examples of forced displacement from protected areas, whose consequences have included "marginalization, poverty, loss of livelihoods, food insecurity, extrajudicial killings, and disrupted links with spiritual sites and denial of access to justice and remedy" (Tauli-Corpuz, 2016, para. 51). While states should do more to protect biodiversity, they must act in accordance with the human rights of those who have long-standing, close relationships with their ancestral territories.

Protecting the rights of those who live closest to nature is not just required by human rights law, it is also often the best or only way to ensure the protection of biodiversity. The knowledge and practices of the people who live in biodiversity-rich ecosystems are vital to the conservation and sustainable use of those ecosystems. It has been estimated that Indigenous territories constitute 37 percent of all remaining natural lands, and that Indigenous territories are 40 percent of all protected areas (Garnett *et al*., 2018). Adding lands of Afro-descendants and other local communities could raise these overlaps to as high as 80 percent (Rights and Resources Initiative, 2020).

Protecting the human rights of Indigenous Peoples and local communities has been shown to result in improved protection for ecosystems and biodiversity (World Resources Institute, 2016; and FAO and FILAC, 2021). Conversely, trying to conserve biodiversity by excluding them from a protected area typically results in failure (Galvin and Haller, 2008). In short, respect for human rights should be seen as complementary, rather than contradictory, to environmental protection.

International and national institutions have recognized the importance of respecting the rights of Indigenous Peoples and local communities who closely depend on natural resources and of supporting their efforts to conserve and sustainably use biodiversity. In particular, Article 8(j) of the CBD requires each party, "subject to its national legislation", to "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", to promote their wider application and to encourage the equitable sharing of benefits. Furthermore, Article 10(c) urges parties to protect and encourage the customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements. The parties to the Convention have built on these provisions, including through the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention*, which, among other things, provides in its Article 7 for "the prior informed consent or approval and involvement of indigenous and local communities" in relation to access to traditional knowledge associated with genetic resources, and in Article 5 requires that the parties take steps to ensure that the benefits arising from utilization of genetic resources and traditional knowledge are shared in a fair and equitable way with the communities concerned.

3.3. Rural women's rights

FAO has done significant work upholding the *Convention on the Elimination of All Forms of Discrimination against Women (CEDAW)*, specifically, on women's rights in the ownership, acquisition, management, administration, enjoyment and disposition of land (Article 16(1)(h)), as well as non-discrimination in rural areas, and women's participation in and benefit-sharing from rural development (Article 14(2)). These represent entry points for ensuring the respect and full realization of women's rights in regard to conservation along with the use of biological and genetic resources (Kenney and Schroder, 2016; Jenkins, 2017), particularly in the context of rural development (which is understood to comprise agricultural and water policies, forestry, livestock, fisheries and aquaculture).

The Committee on the Elimination of All Forms of Discrimination against Women (CEDAW Committee) recommended ensuring that rural development projects (including actions for the conservation and sustainable use of biodiversity) are implemented only after: 1) conducting participatory gender and environmental impact assessments with full participation of rural women; and 2) obtaining rural women's FPIC and ensuring benefit-sharing (for instance, in revenues generated by large-scale development projects (CEDAW Committee, 2016a). More clarity on the obligations on EIAs, FPIC and benefit-sharing for rural women could be derived by analogy from the CBD guidance on Indigenous Peoples and local communities (discussed above). This recommendation is also relevant for agri-business, as highlighted in the Committee on Food Security's *Principles for Responsible Investment in Agriculture and Food Systems* and the *FAO-OECD Guidance on Responsible Agricultural Supply Chains*.

In addition, guidance provided by the CEDAW Committee on rural women in *General Recommendation 34 on Rural Women*[11] *is relevant in interpreting state obligations under the CBD, including under the CBD 2015-2020 Gender Plan of Action*, which aims to mainstream a gender perspective in implementing the Convention and promote gender equality in achieving its objectives. While the Action Plan merely refers to a list of "possible actions for State Parties," the states that are party to both the CEDAW and the CBD should consider the following as legally-binding obligations:

- ensuring that women are effectively consulted during national biodiversity strategy and action plan development;
- incorporating national gender policies into national biodiversity strategies and action plans;
- assessing how biodiversity considerations, including national biodiversity strategies and action plans, can be mainstreamed into national gender policies and action plans;
- adopting gender-responsive budgeting when assigning resources for implementation of the Convention; and

[11] FAO provided extensive inputs to the development of General Recommendation 34 by coordinating inputs from the Rome based agencies of FAO, IFAD and WFP in support of the first draft, and making suggestions to the CEDAW Secretariat in the preparation of subsequent drafts (FAO, 2016). See also FAO, 2013.

- considering the different risks faced by men and women as a result of actions under the Convention.

In turn, the CBD *2015–2020 Gender Plan of Action* identifies helpful practical steps to ensure implementation of the human rights of women in the context of biodiversity policy, such as:

- requesting that gender experts review draft national biodiversity strategies and action plans in order to assess gender sensitivity and provide guidance on improvements;
- identifying Indigenous Peoples- and local communities' experts on diversity and gender mainstreaming to support the integration of gender considerations into national biodiversity strategies and action plans;
- establishing a gender review body or agreement, including Indigenous Peoples and local communities, that can provide input on the gender sensitivity of documents and plans prepared to support implementation of the Convention; and
- identifying which sectors are already gathering and using gender-disaggregated data.

3.4. Children's rights and the environment

Taken as a whole, no group is more vulnerable to environmental harm than children, especially children under the age of 5.[12] Much of the attention to environmental threats to children has been in the context of pollution and exposure to toxic substances. For example, air pollution causes approximately 600 000 deaths of children under the age of 5 every year. Water pollution resulting primarily from unsafe sanitation practices contributes to diarrhoeal diseases that cause more than 350 000 deaths a year of such young children. Climate change is already contributing to a wide range of environmental problems threatening children, such as severe storms and flooding. More than 500 million children live in areas, mostly in Asia, which have extremely high likelihoods of flooding, and approximately 115 million live in zones of high or extremely high risk of tropical cyclones. Beyond the immediate dangers of death and injury, severe storms and floods cause a cascade of additional harms, including compromising safe water supplies, damaging sanitation facilities and destroying housing. Like droughts, floods can cause massive displacement. Children are particularly vulnerable during displacements, when the loss of connections to families, communities and protective services can increase their vulnerability to abuses including child labour and trafficking.

Climate change has many other harmful effects on children's health and well-being, including by increasing the frequency and severity of heatwaves and contributing to wildfires. In addition, the climate crisis is expected to contribute to food scarcity and undernutrition. The WHO has estimated that by 2030, the effects of climate change on nutrition will result in an additional 7.5 million children who are moderately or severely stunted, and approximately 100 000 additional deaths (WHO, 2014, pp. 80, 89).

[12] This section draws on the report of the UN Special Rapporteur on human rights and the environment (John H. Knox) on children's rights and the environment (see Knox, 2018b).

The ramifications of climate change for children go far beyond its effects on their health, as disastrous as those may be. As the Office of the High Commissioner for Human Rights (OHCHR) has stated, "climate change heightens existing social and economic inequalities, intensifies poverty and reverses progress towards improvement in children's well-being" (OHCHR, 2017, para. 50). To give just one example, climate change-induced food insecurity is already increasing the number of marriages of girl children, who are pressured to marry to reduce burdens on their families of origin. (Chamberlain, 2017; Human Rights Watch, 2015). All of these effects – and many others – will drastically worsen throughout the lives of children unless states rapidly adopt and implement effective measures to phase out greenhouse gas emissions and adapt to the effects of a warming climate.

The harm to rural children caused by the loss of biodiversity and ecosystems is often overlooked but is nevertheless of great importance. Children in Indigenous Peoples and other local communities that rely on forests, fisheries and other natural ecosystems for their material subsistence and cultural life suffer disproportionately when those ecosystems are destroyed or degraded. More generally, decreasing biodiversity and the loss of access to the natural environment affect many children around the world. Interaction with microbial diversity is critical to the development of healthy immune systems, as noted above, and the loss of such microbial diversity is linked to the rise in prevalence of autoimmune diseases, allergic disorders and other non-communicable inflammatory diseases in all parts of the world. Exposure to nature also has beneficial effects on mental health (GC 17, Committee on the Rights of the Child, 2013b, para. 40), but many children, especially in urban settings, have little or no contact with the natural environment.

The environmental harms described here interfere with the ability of children to enjoy a very wide range of human rights, including not only their rights to life, health, and an adequate standard of living, but also their rights to development, and even to play and recreation. States' obligations to protect against environmental harm apply with particular force to harm to children. Under the *Framework Principles on Human Rights and the Environment*, states generally have some discretion to decide on the level of substantive environmental protection they deem appropriate. However, with respect to the protection of children's rights from environmental harm, states' discretion is limited by their obligations under the *Convention on the Rights of the Child* and other agreements to adopt and implement special measures of protection, assistance and care for children, and to ensure that the best interests of children are a primary consideration in all actions concerning children (Article 3 of the CRC; Article 1(3) of the ICESCR). These obligations require states not just to protect children from harm, but also to ensure their well-being and development, including by taking into account the possibility of future risk and harm (GC 14, Committee on the Rights of the Child, 2013c, paras. 24 and 71).

As the Special Rapporteur, John Knox, stated in his 2018 report to the HRC, the discretion accorded states in deciding appropriate levels of environmental protection rests on the assumption that societies will make informed decisions as to how to balance the costs of environmental harm against the benefits of spending resources for other goals, such as faster short-term economic growth (Knox, 2018b, para. 57). But the cost-benefit calculus is very different for children, especially younger children. The consequences of environmental harm are usually far more severe, and may include death or irreversible, lifelong effects. The cumulative effects of long-term environmental harm, such as climate change and the loss of biodiversity, increase over time, so that decisions taken today will affect children much more than adults. The lack of full information about many types of environmental harm means that their long-term effects are often poorly understood and underestimated. And the voices of children are only rarely heard in environmental decision-making.

Therefore, to satisfy their obligations of special protection and care, and to ensure that the best interests of the child are taken into account, states have heightened obligations to take effective measures to protect children from environmental harm. They should make certain that they are protecting children's rights, with particular attention to rural children, before they make decisions that may cause environmental harm, including by: collecting and disseminating disaggregated information on the effects of pollution, chemicals and other potentially toxic substances on the health and well-being of children; ensuring that the views of children are taken into account in environmental decision-making; and carrying out children's rights impact assessments. States should adopt and implement environmental standards that are consistent with the best available science and relevant international health and safety standards, and they should never take retrogressive measures.

The lack of full scientific certainty should never be used to justify postponing effective and proportionate measures to prevent environmental harm to children, especially when there are threats of serious or irreversible damage. On the contrary, states should take precautionary measures to protect against such harm. Once standards that are protective of children's rights are adopted, states must ensure that they are effectively implemented and enforced. To that end, they must provide regulatory agencies with sufficient resources to monitor and enforce compliance with domestic laws, including by investigating complaints and bringing appropriate remedial actions. As part of their obligations to protect children from environmental harm, states must adequately regulate private actors, including business enterprises.

These are a set of international obligations that legal experts who are advising on the development or review of national legislation would likely have to discuss for the first time in a variety of natural resource sectors.

3.5. Relevance for national legislation on natural resources

These clarifications are essential for FAO's support to the implementation of the 2012 *Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (VGGT)* and the 2015 *Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the context of food security and poverty eradication (SSF Guidelines)*. Both sets of guidelines provide accessible and flexible guidance for natural resource decision-makers and managers, as well as natural resource stakeholders. They are both based on international human rights instruments, so their interpretation and implementation can rely explicitly on international human rights obligations and standards.

A key opportunity here is to bring together more explicitly the human rights-based approach and the ecosystem approach within the specificities of natural resource governance. To that end, a closer analysis of guidance adopted under the CBD can provide more clarity on the interface between impact assessment obligations, and free, prior and informed consent (FPIC), along with fair and equitable benefit-sharing (Framework Principle 15) to ensure the respect of Indigenous Peoples' and other communities' human rights in different natural resource sectors (Morgera, 2018).[13] In effect, the VGGT make explicit reference to the CBD in para 9.3. In turn, CBD Parties have considered the VGGT relevant to address the interface of poverty and biodiversity, as stated in Annex Section 2 of the *CBD COP Decision XII/5* and in para. 7 of

[13] This Section 3.5 builds on Morgera, 2018.

the *CBD COP Decision XIII*. The CBD Parties have also considered the SSF Guidelines relevant to mainstream biodiversity in the fisheries sector, as stated in para. 64 of the *CBD COP Decision XIII*. The Framework Principle 15 and the CBD guidelines discussed below are also relevant for FAO's work to support the implementation of provisions on farmers' rights under the *International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) of 2001* and the UNDROP.

On environmental and socio-cultural impact assessments, the *Akwé: Kon Guidelines* (*CBD COP Decision VII/16F*) provide a step-by-step approach to the inclusion of inter-linked socio-cultural and biodiversity concerns in environmental impact assessments, calling for specific attention to: beliefs systems, languages and customs, traditional systems of natural resource use, maintenance of genetic diversity through Indigenous customary management, exercise of customary laws regarding land tenure, as well as distribution of resources and benefits from transgenerational aspects, including opportunities for elders to pass on their knowledge to youths. The Guidelines clarify that processes should be established for recording Indigenous Peoples' views, for example when they are unable to attend public meetings because of remoteness or poor health, as well as the usage of nonwritten forms. In addition, governments should provide sufficient human, financial, technical and legal resources to support Indigenous expertise proportionally to the scale of any proposed development. Indigenous communities should also be involved in the development's financial auditing processes so that the resources invested are used effectively.

Another CBD guidance, the *Voluntary Guidelines on Biodiversity-inclusive Impact Assessments (CBD COP Decision VIII/28)*, support incorporating biodiversity-related issues into environmental impact assessments (EIAs) beyond cases in which sacred sites or lands traditionally used by Indigenous Peoples are concerned. These guidelines call for an assessment of several human rights-related issues, such as: inter-related "socio-economic, cultural and human-health" impacts; changes in access to and rights over biological resources; social change processes resulting from a proposed project; sensitive species that may be important for local livelihoods and cultures; activities leading to displacement of people; along with impacts on societal benefits and values related to land-use function *(CBD COP Decision VI/7)*.

Additionally, the *Mo'otz Kuxtal Guidelines* (*CBD COP Decision XIII/18*)[14] contain several elements that serve to explain what FPIC and benefit-sharing obligations entail, that go beyond any guidance available under international human rights. First, FPIC in the Guidelines conveys that Indigenous Peoples should not be "pressured, intimidated, manipulated or unduly influenced." Second, the understanding of "prior" underscores the need to take into account the time requirements for Indigenous Peoples' own decision-making procedures. Third, the understanding of "consent or approval" includes the right *not* to grant consent and to allow the temporary use of traditional knowledge only for the purpose that it was granted, unless it was otherwise mutually agreed (para. 7). More fundamentally, the Guidelines emphasize that FPIC is a:

> *continual* process of building mutually beneficial, *ongoing* arrangements between users and holders of traditional knowledge, in order to build trust, good relations, mutual understanding, intercultural spaces, knowledge exchanges and to create new knowledge and reconciliation". This clearly clarifies that consent or approval is an iterative process, not a one-off exercise, which "should underpin and be

[14] While these guidelines focus on access to the traditional knowledge of Indigenous Peoples and local communities, their clarifications of FPIC and benefit-sharing obligations can also be considered relevant for other contexts (extractives or creation of protected areas, for instance), both because of the guidance's general nature and the inextricable links between Indigenous Peoples' lands, resources and knowledge.

> an integral part of developing a relationship between users and providers of traditional knowledge (*CBD COP Decision XIII/18*, para. 8; Morgera, 2019).

In addition, the Mo'otz Kuxtal Guidelines provide step-by-step guidance to implement FPIC through:

- the provision of adequate and balanced information from a variety of sources that is made available in indigenous or local languages, to ensure that all parties have the same understanding of information and terms provided;
- the submission of a written application in a manner and language comprehensible to the traditional knowledge holder; and
- a legitimate and culturally appropriate form of decision-making process, including consideration of possible social, cultural and economic impacts (para. 7(b)).

CBD guidance also provides more detail on how fair and equitable benefit-sharing supports the agency of beneficiaries and the need to build a genuine partnership among actors whose relationship is characterized by power asymmetries (Morgera, 2019). The Akwé: Kon Guidelines call for the integration of benefit-sharing as part of any assessment, which can help to move away from an exclusive focus on 'damage control' issues that tend to characterize these exercises. Carefully thinking about benefits from Indigenous Peoples' viewpoint, at the early stage of scoping for impacts, in and of itself requires a systematic consideration of not only the negative impacts (such as potential damage to ways of life, livelihoods, well-being and traditional knowledge) but also of positive impacts on food, health, environmental sustainability, together with community well-being, vitality and viability (employment levels and opportunities, welfare, education and its availability as well as standards of housing, infrastructure, services) (para. 40). With these considerations, the Guidelines may 'open up' assessment to different worldviews so as to take into account, in an integrated manner, Indigenous Peoples' rights over lands and waters traditionally occupied or used by them together with their associated biodiversity.

In addition, the Mo'otz Kuxtal Guidelines, emphasize that benefit-sharing is about iterative partnership building, rather than a top-down, one-off or unilateral flow of benefits where Indigenous Peoples are passive beneficiaries. These Guidelines make reference to partnership and cooperation as principles which guide the process for establishing mutually agreed terms, so as to ensure fair and equitable benefit-sharing with and among traditional knowledge holders. In addition, they indicate that "benefits should, as far as possible, be shared in understandable and culturally appropriate formats, with a view to building enduring relationships, promoting intercultural exchanges, knowledge and technology transfer, synergies, complementarity and respect" (para. 23). Furthermore, the Guidelines draw attention to the role of benefit-sharing in supporting cultural reproduction, by stating that "benefit-sharing could include a way of recognising and strengthening the contribution of Indigenous Peoples and local communities to the conservation and sustainable use of biological diversity, including support for the intergenerational transmission of traditional knowledge" (para. 13). The Guidelines note that "benefit-sharing should be fair and equitable within and among relevant groups, taking into account relevant community level procedures and as appropriate gender and age/intergenerational considerations" (para. 14). Finally, concerns about potential

inequities at the level of intracommunity benefit-sharing that have already been encapsulated in other international guidelines – notably the Committee on Food Security's *Guidance for Responsible Agricultural Investment* – are also addressed.

This international guidance adopted intergovernmentally under the CBD is particularly significant if we consider that the aim and content of international obligations regarding fair and equitable benefit-sharing in international human rights law remain quite elusive. Former Special Rapporteur on the rights of Indigenous Peoples, James Anaya, emphasized that the preferred model for natural resource development is "one which Indigenous Peoples themselves initiate and engage in." Extractive projects are to be carried out by outside companies or the state only if Indigenous Peoples are not able to do so themselves and in that case an agreement is needed to fully protect their rights and make Indigenous Peoples genuine partners in natural resource development projects (for instance, through a minority ownership interest in the extractive operations) to participate in project decision-making *and* share in profits (Anaya, 2013, para. 75). This points to the usefulness of benefit-sharing arrangements that at the same time provide enhanced participation opportunities and income generation for Indigenous Peoples. In addition, Anaya emphasized that "benefit sharing must go beyond restrictive approaches based solely on financial payments which, depending on the specific circumstances, may not be adequate for the communities receiving them." He referred to documented experience showing that monetary benefits to Indigenous Peoples may have negative (including divisive) effects on communities and lead to the exercise of undue influence and even bribery. Accordingly, he recommended giving consideration to "the development of benefit-sharing mechanisms which genuinely strengthen the capacity of indigenous peoples to establish and follow up their development priorities and which help to make their own decision-making mechanisms and institutions more effective" (Anaya, 2010, para. 80). Anaya thus encouraged Indigenous Peoples to use consultations with governments and other stakeholders as mechanisms to reach "agreements that are in keeping with their own priorities and strategies for development, bring them tangible benefits and, moreover, advance the enjoyment of their human rights" (Anaya, 2013, para. 59). Other international human rights processes have been significant in clarifying that they must be consistent with Indigenous Peoples' and traditional communities' own priorities (Knox, 2017b, paras. 53 and 47–49).

4. Climate change and biodiversity

The *Framework Principles on Human Rights and the Environment*, as well as other reports by Special Rapporteurs on human rights and the environment on biodiversity, when read together with relevant guidance adopted under the CBD, provide a host of other directions for providing legal advice on national legislation on natural resources, with particular regard to the mitigation of and adaptation to climate change, and the interdependence of the human right to health and biodiversity (Morgera, 2020).

4.1. Human rights and climate change

CBD Parties have systematically identified potential and actual threats that climate change and climate change response measures pose to the conservation and sustainable use of biodiversity, along with ways to assess and prevent negative impacts on biodiversity through mutually supportive interpretation and application of international climate and biodiversity law (Morgera, 2013). These contributions have been based on the CBD ecosystem approach and have (often implicitly) contributed to defining a rights-based approach to climate change adaptation and mitigation, mainly with regard to the human rights of Indigenous Peoples and local communities (see above). Given FAO's normative work on integrating climate change in international guidance and national regulator approaches to natural resources (see FAO, 2020), the following CBD guidelines can support those providing legal advice that integrates human rights, climate change and biodiversity.

For instance, CBD Parties have committed to:

- integrating ecosystem-based approaches when updating their nationally determined contributions, where appropriate and pursuing domestic climate action under the Paris Agreement, taking into account the importance of ensuring the integrity and functionality of all ecosystems, including oceans;
- recognizing that ecosystems can be managed to limit climate change impacts on biodiversity and support people's resilience, taking into account multiple social, economic and cultural co-benefits for local communities; and
- recognizing the role of indigenous and community conserved areas (ICCAs) and biodiversity-based livelihoods in the face of climate change *(CBD COP Decision XIV/5)*.

CBD Parties have also adopted specific guidelines under COP Decision IX/2 on biofuels production together with the production and use of biomass for energy, to avoid or minimize negative impacts on forest biodiversity and the lives of Indigenous Peoples and local communities. They mainly recommend applying earlier CBD standards in this sector, such as:

- the *Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity* (*CBD COP Decision VII/12*);

- the CBD work programme on protected areas (*CBD COP Decision VII/28*);
- the CBD work programme on traditional knowledge (*CBD COP Decision V/16*);
- the *Akwé: Kon Guidelines* (*CBD COP Decision VII/16F*);
- the *Global Strategy for Plant Conservation* (*CBD COP Decision VI/9*); and
- the *Guiding Principles for the Prevention, Introduction and Mitigation of Impacts of Alien Species that Threaten Ecosystems, Habitats or Species* (*CBD COP Decision VI/23*).

In addition, CBD parties under *COP Decision X/37,* emphasized that impact assessments must also be carried out to address relevant land tenure and resource rights and impacts on areas of cultural, religious and heritage interest. Furthermore, there must be respect for Indigenous Peoples' and local communities' sustainable agricultural practices, along with food and energy security (para. 2, 6, and 8–10).

CBD Parties have also adopted specific guidance on Reducing emissions from deforestation and forest degradation (REDD+), including human rights-related concerns, such as the possible loss of traditional territories and restriction in the rights of Indigenous Peoples and local communities to have access to, use of and/or ownership of land and natural resources. Other concerns include inadequate tangible livelihood benefits for Indigenous Peoples and local communities as well as a lack of equitable benefit-sharing; and the need to ensure the full and effective participation of Indigenous Peoples and local communities in relevant policy-making and implementation processes (*CBD COP Decision XI/9*, Annex).

More recently, CBD Parties have adopted voluntary guidelines for the design and effective implementation of ecosystem-based approaches to adaptation and disaster risk reduction under *COP Decision XIV/5*. These approaches should be aimed at contributing to the well-being of societies, including Indigenous Peoples and local communities, together with maintaining and increasing the resilience of ecosystems and people. The guidelines should be read in conjunction with the *CBD COP Decision XIII/5-– Ecosystem Restoration: Short-Term Action Plan*. Together, these guidelines call for:

- ensuring transparency throughout planning and implementation;
- promoting fair and equitable benefit-sharing and not exacerbating existing inequities, thus aiming to prevent and avoid the disproportionate impacts of climate change as well as disaster risk on vulnerable groups, Indigenous Peoples as well as local communities, women and girls;
- integrating traditional knowledge in identifying and monitoring climatic, weather and biodiversity changes along with impending natural hazards and maintaining/re-introducing customary sustainable use (traditional agricultural practices);
- applying the CBD Akwé Kon Guidelines at the earliest stage of project design;

- seeking prior informed consent through the full and effective participation of Indigenous Peoples and local communities, as well as the engagement of women and other relevant stakeholders at all stages of ecosystem restoration, particularly in the identification of priority areas for restoration;
- reviewing, improving or establishing a legal and policy framework for land tenure, recognizing the rights of indigenous peoples and local communities;
- selecting restoration approaches that allow people to maintain and/or establish sustainable livelihoods; and
- maximizing synergies to achieve multiple benefits, for instance in gender equality and human health.

Furthermore, CBD Parties have adopted voluntary guidelines under *COP Decision XII/23* on coral reefs and closely associated ecosystems (such as mangroves and seagrasses), that can support socioecological resilience to the impacts of climate change, as well as respect for substantive and cultural human rights.

These guidelines call for:

- maintaining sustainable livelihoods and food security in reef-dependent coastal communities, including Indigenous Peoples and local communities, along with providing for viable alternative livelihoods;
- promoting community-based measures, including community rights-based management, to manage fisheries sustainably; and encouraging as well as supporting community-based marine-managed areas;
- managing impacts from large-scale tourism development and consequent habitat loss as well as alteration in coral reefs and closely associated ecosystems, together with support for sustainable tourism, by providing socioeconomic incentives and empowering coastal communities for eco-tourism operations (paras. 8(1)(b), 8(3)(c–g) and 8(8)(c));
- identifying and applying measures to improve the adaptive capacity of coral reef-based socio-ecological systems within the local context, which will ensure sustainable livelihoods of reef-dependent coastal communities and provide for viable alternative livelihoods, on the basis of socio-ecological vulnerability monitoring and assessment protocols in coral reef regions;
- prioritizing poverty-reduction programmes for reef-dependent coastal communities and implementation of socioeconomic incentives to encourage coastal communities to play a central role in conservation and sustainable use of coral reefs along with closely associated ecosystems (for instance, through community-based conservation trust funds supported by fees from eco-tourism and fines for unsustainable use); and empowering coastal communities in reef-management, by providing necessary resources and capacity-building, as well as devolving responsibilities (*CBD COP Decision XIV/5*, para. 9 and 10(f)).

4.2. Biodiversity and everyone's right to health

Clarity on the factual relationship between biodiversity and the human right to health has been bolstered since 2015, when WHO and the CBD Secretariat published a seminal joint report *Connecting Global Priorities: Biodiversity and Human Health – A State of Knowledge Review,* identifying biodiversity as a key environmental determinant of human health due to links on various spatial (from planetary to microbial) and temporal scales. Many of the findings of the report are relevant to FAO's mandate, such as:

- all terrestrial and freshwater ecosystems play a role in underpinning the water cycle, including regulating nutrient cycling and soil erosion. Many ecosystems (such as mountain ecosystems) can also play a role in managing pollution – the water purification services they provide underpin water quality;

- ecosystems can affect air quality in three main ways: i) by directly removing air pollution (absorption or intake of gases through leaves, direct deposition of particulate matter on plant surfaces); ii) by affecting meteorological patterns (local temperature, precipitation, air flows); and iii) by emitting volatile organic carbons that affect atmospheric chemistry and air-quality regulation;

- components of biodiversity can be used as bio-indicators of known human health stressors, as well as in air- and water-quality mapping, monitoring and regulation. For instance, lichens are making headway as reliable indicators for air quality regulation. In addition, long-term trends in freshwater ecosystems (water quality) are arguably better monitored using the diversity of aquatic organisms;

- a diversity of species, varieties and breeds, as well as wild sources (plants, bush meat, insects and fungi) underpin dietary diversity and good nutrition. The global decline in various species will present major public health challenges for resource-dependent human populations, particularly in low- and middle-income countries (significantly increasing clinical levels of energy, protein, certain vitamins, iron, zinc, magnesium and fatty acids). Conservation measures that deny access to bush meat and other wild sources of food and medicines can thus have negative impacts on human health;

- human-caused changes in ecosystems, such as modified landscapes, intensive agriculture and antimicrobial use, are increasing the risk and impact of infectious disease transmission, because they result in enhanced opportunities for contact at the human/animal/environment interface and through changing vector abundance, composition, and/ or distribution; and

- biodiversity has been an irreplaceable resource for the discovery of medicines and biomedical breakthroughs. Between 1981 and 2010, 75 percent of anti-bacterials newly approved by the United States Food

and Drug Administration can be traced back to natural product origins. Percentages of anti-virals and anti-parasitics derived from natural products approved during that same period are similar or higher. Reliance upon biodiversity for new drugs occurs in nearly every domain of medicine (WHO and CBD Secretariat, 2015).

In 2018, the Assembly of the WHO emphasised the complex and non-linear linkages specifically between human health, biodiversity (species and genotypes of organisms providing diverse foods, essential nutrients and medicines) and ecosystem services. The WHO has increasingly underscored how:

- exposure to biodiverse green spaces, particularly in urban settings, can improve psychological, cognitive and physiological health (serving as a treatment for depression, anxiety and behavioural problems, as well as reducing recuperation times and improving recovery outcomes in hospital patients with non-communicable diseases) (WHO, 2018);

- exposure to biodiverse green spaces also provides health benefits for children's development, as well as encourages regular physical activity and improves life expectancy (WHO, 2018);

- reduced human contact with biodiversity, alternatively, may lead to reduced diversity in the human microbiota, weakening of the human microbiome's immune-regulatory role and onset of non-communicable diseases (type 1 diabetes, multiple sclerosis, inflammatory bowel diseases) (WHO and CBD Secretariat, 2015).

Against this background, legal experts advising on the development or review of national legislation in a variety of natural resource sectors can benefit from CBD Guidance on the linkages between human right to health and biodiversity and support consideration of all dimensions of health and human well-being (food and nutrition security, infectious and non-communicable diseases as well as the psychological and biocultural dimensions of health) in the light of the following state obligations:

- addressing the unintended negative impacts of health interventions on biodiversity (for example, antibiotic resistance, contamination from pharmaceuticals) and incorporating ecosystem concerns into public health policies;

- addressing the unintended negative impacts of biodiversity interventions on human health (for example, negative effects from the creation of protected areas or hunting bans on access to traditional food and medicinal plants);

- considering relevant health-biodiversity linkages in developing and updating relevant national policies, risk analyses, vulnerability assessments along with integrated impact and strategic assessments in order to target a broader spectrum of issues threatening health outcomes, including antimicrobial resistance, vector-borne and waterborne diseases, food security and malnutrition, as well as interactions with other drivers

of biodiversity loss and ill health, including climate change (*CBD COP Decision, XIII/6*);

- adopting preventive measures for human health based on strengthening the resilience of socio-ecological systems (*CBD COP Decision XIV/4*).

5. Conclusions

The *Framework Principles on Human Rights and the Environment*, and relevant guidance adopted under the CBD, provide detailed guidelines on how to respect human rights standards in complex natural resource governance, which can be put into practice as part of the multiple normative initiatives to implement FAO's mandate and its instruments. These guidelines should be taken into account systematically by all legal experts advising on the development and review of national legislation on agricultural development and the management of renewable natural resources, ranging from land, water, fisheries, plants, and animals to food, forestry, wildlife, biodiversity and trade laws, as well as on associated issues like climate change, gender equality, agribusiness operations, the right to food, the right to water, and the prevention of potential conflicts arising from the competition for natural resources.

From a practical perspective, more explicit and systematic reliance on the Framework Principles and the CBD and its guidance by national and international legal advisors in natural resources law, can contribute towards heightening the urgency to protect biodiversity, which could be perceived as a broadly shared priority across different groups of human rights-holders and constituencies. This approach could support the building of new alliances among sectors (within government and civil society), for example, in the health, children, climate change and biodiversity sectors. Fundamentally, it could support policy coherence (SDG 17.14) and more synergistic approaches to the realization of multiple SDGs, while demonstrating the benefits of better understanding the multiple state obligations as aligned and mutually supportive of each other.

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In this legal paper two leading thinkers in the field of human rights and environmental law combine their expertise to reflect on the interdependence of human rights and the environment and how this relationship is being shaped by international law.

This interdependence has many implications for the development and implementation of national laws on agricultural development and the management of renewable natural resources, ranging from land, water, fisheries, plants, and animals, to food, forestry, wildlife, biodiversity and trade laws.

This legal paper offers valuable insights into the Framework Principles on Human Rights and the Environment and other international and regional instruments, and provides guidance on how they can be put into practice. Legal experts advising on the development or review of national legislation in all aspects of natural resource governance will find a useful analysis of the most recent developments in the field, and some practical steps to contribute to the implementation of the internal agenda on human rights and the environment.

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