



Annex III**Additional good practices in the implementation of the right to a safe, clean, healthy and sustainable environment****Supplementary information on the report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment**

The following information is supplementary to the report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment (A/HRC/43/53). It is available on the website of the Office of the High Commissioner for Human Rights (<https://www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/Annualreports.aspx>).

Annex to the report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment

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I. Introduction

1. Due to a restrictive word limit, the following good practices could not be included in the main body of the Special Rapporteur's report on good practices in the implementation of the right to a safe, clean, healthy and sustainable environment (A/HRC/43/53). However, these good practices are important because they demonstrate the availability of effective actions to simultaneously protect human rights and address environmental challenges. Drawn from every continent and featuring more than 175 States, the highlighted good practices are intended to inspire all States to take ambitious action to address the global environmental crisis.

II. Additional good practices in the implementation of the right to a safe, clean, healthy and sustainable environment

A. Procedural elements

2. There are two regional treaties that identify fulfilling the right to a healthy and sustainable environment as their objective and provide a series of procedural tools intended to contribute to respecting, protecting and fulfilling this right. The Aarhus Convention on Access to Information, Public Participation, and Access to Justice in Environmental Matters has been highly effective over the past two decades in strengthening environmental democracy.¹ It is important to note that although the Aarhus Convention was negotiated under the auspices of the Economic Commission for Europe, it is open to participation by any State in the world. Guinea-Bissau has expressed its intention to become the first African State to accede to the Convention. The Escazú Agreement on Access to Information, Public Participation, and Access to Justice in Environmental Matters in Latin America and the Caribbean is a similar treaty that provides even stronger protection for the right to a healthy environment as well as pioneering protection for environmental human rights defenders.²

1) Access to information

3. France developed an online portal for environmental information, which includes data on: pollutant emissions from vehicles sold in France; exposure of urban populations to fine particulate pollution; electricity production (by source) and consumption; the quality of water bodies; municipal solid waste generation and collection; and household energy prices.³

4. North Macedonia developed a national environmental information system that includes air quality monitoring (17 stations), water quality monitoring (eighteen hydrological stations that monitor surface water), and comprehensive, easily accessible information on the state, quality and trends in all aspects of the environment.

5. There are also specialized national information systems. For example, Bulgaria created a Biodiversity Information System project to assist in the implementation of its Biodiversity Act and Biodiversity Strategy 2020. The system is intended to improve information on the status of, and threats to, species and ecosystems, which will increase awareness and improve management.

¹ UNECE. 2018. Aarhus in practice: How the Aarhus Convention made a difference in your country. <https://www.unece.org/environmental-policy/conventions/public-participation/aarhus-convention/20th-anniversary-of-the-adoption-of-the-aarhus-convention/aarhus-in-practice-how-the-aarhus-convention-made-a-difference-in-your-country.html>

² See <https://www.cepal.org/en/escazuagreement>

³ See <https://www.data.gouv.fr/fr/>

6. Brazil has a comprehensive set of information systems, standards, and norms for managing wildlife, fisheries and forest resources.⁴ All information is freely available on the internet, including monitoring systems for the wood supply chain and trade in fauna and flora listed under the Convention on International Trade in Endangered Species (CITES).⁵ This information is intended to ensure transparency and accountability.

7. Key provisions for gathering and sharing environmental information are mechanisms such as Environmental Impact Assessments (EIA) and Strategic Environmental Assessments (SEA). Almost every UN State now has an EIA process for major projects, and a growing number of States (e.g. EU member states, New Zealand) are employing SEA to identify the potential consequences of laws, policies, programs and plans. Senegal strengthened the environmental provisions in its constitution in 2016, broadening the requirement for environmental assessment to apply to all plans, projects and programs.⁶ Laws governing both EIA and SEA should explicitly require consideration of the human rights implications of proposed actions.

2) **Public participation**

8. Uruguay's National Water Policy Law enshrines the right to participate effectively in the formulation, implementation and evaluation of plans and policies. To this end, Uruguay created a Water and Sanitation Advisory Commission, three Regional Councils, and a number of other advisory bodies to seek public and expert input and provide advice on national water and sanitation policies. As a result, action plans have been implemented to improve water quality in the Santa Lucía, Río Negro and Río Tacuarembó river basins.

9. In Kazakhstan, public participation in decision-making on environmental issues is carried out through holding public hearings; conducting public environmental assessment reviews; participation in public councils under state bodies; and submission of comments and suggestions on environmental impact assessments as well as draft laws, plans, and policies.⁷

10. Ukraine has new laws on Environmental Impact Assessment and Strategic Environmental Assessment that enable broad public participation. The EIA law requires the creation of an open access electronic register of EIA information and procedures. Within the first year over seventeen hundred EIA procedures were initiated throughout Ukraine. User-friendly tools have been developed, including an 'eco bot' – a computer program that provides information updates on PCs or smartphones regarding specific EIAs or new EIA procedures in a selected region.

3) **Access to justice**

11. The economic barriers to access to justice include the costs of filing lawsuits and the so-called loser pays rule, which requires unsuccessful litigants to pay the costs of the winning parties. Costa Rica, Finland, Ireland, Slovakia, and Sweden are States where unsuccessful litigants are usually not required to pay the costs of the government in environmental cases. In Denmark, Hungary, Romania, Slovenia, Spain and Hungary, civil society organizations have access to legal aid in environmental cases.⁸

12. The Philippines offers a variety of good practices in access to justice through three national institutions including the Environmental Ombudsperson, the Commission on Human Rights, and the Supreme Court of the Philippines. The Environmental Ombudsperson investigates allegations that public agencies or officials have acted (or failed to act) in ways that either violate environmental laws or cause environmental degradation.

⁴ <http://www.ibama.gov.br/sistemas>

⁵ Sinaflor, <http://www.ibama.gov.br/sinaflor>. Siscites, <http://www.ibama.gov.br/sistemas/siscites>

⁶ Constitution of Senegal, Art. 25.2.

⁷ Environmental Code, Article 57-1.

⁸ J. Darpo. 2013. Effective Justice: Synthesis report of the study on the Implementation of Articles 9.3 and 9.4 of the Aarhus Convention in the Member States of the European Union.

The Commission on Human Rights conducted a ground-breaking global investigation into human rights violations caused by transnational corporations responsible for a large proportion of greenhouse gas pollution. The Supreme Court created specialized Rules of Procedure for environmental cases that expedite justice, reduce costs, and provide for a new writ of *Kalikasan* (nature) a special remedy to protect the right to a healthy environment. The Supreme Court has issued many precedent-setting decisions involving the right to a healthy and ecologically balanced environment, including cases about standing, intergenerational equity, the precautionary principle, polluter's liability, the accountability of government agencies, and continuing mandamus.⁹

13. Hungary established an ombudsman for future generations (OFG) in 2008, with a mandate to focus on two key issues: the human right to a healthy environment and safeguarding the 'common heritage of the nation.' The OFG receives petitions from the public and conducts investigations about alleged violations of human rights as a result of government action or inaction. The OFG also: monitors legislative and policy developments; suggests new laws or the amendment of existing ones; serves as a mediator for negotiations between NGOs, government stakeholders, professionals and academia regarding important legislative reforms; and recommends actions to promote the effective realisation of the rights of future generations. Finally, the OFG can intervene in court proceedings concerning the judicial review of environmental permits and seek constitutional review of national or local legislation by the Constitutional Court or the Supreme Court if the legislation appears to violate the right to a healthy environment. For example, in 2019 the OFG sought constitutional scrutiny of the Act on Forest Management, based on concerns that provisions of the proposed law supported unsustainable forestry and infringed the non-regression principle. Wales has a law on the rights of future generations and a Commissioner for Future Generations to defend those rights.¹⁰

14. Uruguay has a very straightforward system for enabling citizens to submit complaints about pollution and other types of environmental degradation. Any citizen, from anywhere in the country, can make an environmental complaint through a form available on the Ministry website.¹¹ Each complaint is evaluated by a technical team, and if well-grounded and within the Ministry's jurisdiction, an investigation is carried out, which may require inspections, monitoring and laboratory analysis. The results of the investigation are provided to the complainant. Through this process, citizens increase the environmental monitoring capacity of the government.

15. The Administrative Court of Thailand plays a vital role in protecting the right to a healthy environment in cases brought by citizens and local communities. The Administrative Court has made orders in more than 65 cases involving human rights and environmental issues such as pollution from gold mining that violated human rights, impacts of limestone mining on people's health, and industrial lead contamination in a creek.¹²

16. To overcome the problem encountered when governments fail to implement court orders, some judiciaries rely on a tool called continuing mandamus, which enables judges to remain involved in overseeing the implementation of their judgments. For example, the Supreme Court of Argentina used continuing mandamus in the famous Mendoza case, in which all three levels of government were ordered to take steps to clean up the Riachuelo River watershed and fulfill the rights to clean water, adequate sanitation, and a safe, clean,

⁹ *Oposa v. Factoran* (1993); *MMDA v. Concerned Citizens of Manila Bay* (2008), *Resident Marine Mammals et al v. Reyes* (2015), *International Service for the Acquisition of Agri-biotech Application vs. Greenpeace Southeast Asia (Philippines)*, and *Rules of Procedure for Environmental Cases*, A.M. No. 09-6-8-SC, effective April 29, 2010

¹⁰ *Well-being of Future Generations (Wales) Act*, 29 April 2015

¹¹ <http://www.mvotma.gub.uy/denuncias-ambiente.html>

¹² Cases No. E.1544/2013 (Loei province), No. E. 9/2012 (Nong Bua Lamphu), and No. 597/2008 (Thong Pha Phum District, Kanchanaburi Province).

healthy and sustainable environment.¹³ Government officials were required to provide quarterly progress reports to the Supreme Court in public hearings. The Supreme Courts of India and the Philippines have also used the remedy of continuing mandamus.

17. Chile's National Human Rights Institution and the Chilean Ombudsperson for Children both used litigation against the government in an effort to address an air pollution crisis in the communities of Quintero and Puchuncavi. Rooted in the constitutional right of Chileans, including children and youth, to live in a pollution-free environment, the case resulted in a strong decision from the Supreme Court of Chile.¹⁴ The Ombudsperson also undertook on-site visits to schools and called for a focus on preventing pollution so children and youth can enjoy all of their human rights.

18. The Kenya National Commission on Human Rights is authorized to review Environmental Impact Assessments to ensure that proposed projects will not have adverse effects on human rights, including the right to a healthy environment.

B. Substantive elements

1) Clean air

19. Kuwait's air quality monitoring network has 15 stations in residential, urban, commercial and industrial areas. The Kuwait Oil Company, in collaboration with the Kuwait Environment Public Authority, operates 13 additional stations to monitor air quality in areas where oil fields are near residential areas.

20. An air quality health index has been developed using air quality data produced by the Hungarian air quality monitoring network. The four categories of the air quality index are based on the health effects of the major air pollutants. The index values are depicted on a map for all settlements where at least one monitoring station is located and published daily.¹⁵ Norway provides an air quality forecast for today and tomorrow at all times in the entire country that can be accessed through mobile phones, computers and tablets. The forecast, shown in maps and graphs, includes dust, nitrogen dioxide, ground-level ozone, particulate matter. Health advice is provided for the general public, seniors, children, pregnant women, and people who are vulnerable to air pollution due to pre-existing health conditions such as asthma and cardiovascular diseases.

21. Bosnia and Herzegovina has a new Law on Air Protection and is updating its Air Protection Strategy with assistance from the Swedish International Development Agency to reduce Sox, NOx, and particulate matter (PM). These steps should enable Bosnia and Herzegovina to meet the EU air quality guidelines, with huge benefits for human health and the environment.

22. Turkmenistan's 1996 Law on Protection of Atmospheric Air authorizes a fee on emissions from stationary sources that is based on their toxicity to humans.

23. Lebanon enacted a new law on the Protection of Air Quality in 2018. This is a key element of advancing the National Strategy for Air Quality Management 2015-2030.

24. Improving air quality within buildings is a priority for Bulgaria, Hungary, Montenegro and Poland. Poland's government launched a new Clean Air program in 2018, with the motto "Take care of your piece of heaven," offering financial incentives to renovate more than four million homes and buildings.¹⁶ with better insulation and more efficient heating systems. With a budget of 25 million Euros, the program also includes educational

¹³ Beatriz Silvia Mendoza and others v. National Government and Others, 2008, M. 1569, 8 July 2008 (Supreme Court)

¹⁴ Supreme Court of Chile. Decision in Cases No. 27.007-2019 and No. 27.054-2019.

¹⁵ National Public Health Center (<http://oki.antsz.hu/>).

¹⁶ Ordinance No. 40 of the Prime Minister of March 16th, 2018.

activities aimed at encouraging citizens to take actions that reduce air pollution. The program will be implemented over the next 10 years, contributing to improved air quality and lower carbon emissions. The Steering Committee on the National Program for the Protection of Air will monitor implementation and propose actions to accelerate progress. Poland also prohibited the sale of stoves and fuels that do not meet emissions standards.¹⁷

25. Clean cooking efforts are underway in many States including Ecuador, Ethiopia, India, Indonesia, and Sudan. These good practices have contributed to a significant decline in premature deaths from household air pollution.¹⁸

26. Pradhan Mantra Ujjwala Yojana is an Indian government programme started in 2016 that targets women living in poverty. Funds are provided directly to women to purchase LPG stoves, connections and fuel. More than 50 million new LPG connections have already been made.¹⁹ The goal is to have LPG in 95 per cent of households by 2022. This programme has a positive impact on the lives of millions of women, girls and households living in poverty by providing them with access to safe, affordable cooking technologies and fuels and reducing time previously spent gathering fuels.

27. Indonesia implemented a successful “Zero Kero Programme”, launched in 2007, to convert households from kerosene to LPG.²⁰ LPG is more efficient than kerosene and produces less household air pollution. Over 57 million free LPG starter packages (including a one-burner stove, hose, regulator and a filled 3-kilogram cylinder) were distributed to households and micro-businesses. Total household kerosene use in Indonesia dropped 92 per cent between 2006 and 2015. The programme also reduced overall greenhouse gas emissions from cooking. A post-implementation survey showed that 99.8 per cent of the households preferred using LPG to kerosene, citing its greater efficiency, speed of cooking and cleanliness.²¹

28. The national efficient cooking programme of Ecuador removes LPG subsidies (previously costing \$700 million per year) and helps households switch to induction cooktops and renewable electricity. The programme aims to replace LPG-based cooktops and water heating systems with electric systems for 3 million families.

29. Many economists support putting fees or taxes on air emissions, thus implementing the polluter pays principle. A challenge is to ensure that the price on air emissions is high enough to produce substantial reductions, as affected businesses will raise competitiveness concerns. Another challenge is that different pollutants have different health and environmental impacts, so prices should be higher on emissions of more harmful substances. The Chilean tax on stationary sources of air pollution is higher for facilities located in more densely populated areas. The national pollution tax in France that imposes higher taxes on more harmful air pollutants.

30. Serbia is investing millions of Euros to improve air quality through upgrading technologies at industrial facilities including smelters (Bor), steel mills (Smederevo), and coal-fired power plants (Kostolac and Obrenovac). Air quality in Bor has already improved.

31. In response to problems caused by transboundary air pollution, Singapore created a program in 2013 to subsidize medical treatment for air pollution-related illnesses

¹⁷ Act of July 5th, 2018 amending the Act on Fuel Quality Monitoring and Control System (Journal of Law of 2018, item 427 and 650). Regulations of the Minister of Energy of September 27th, 2018 on solid fuels (Journal of Law of 2018, items 1890-1893).

¹⁸ Health Effects Institute, State of Global Air 2018.

¹⁹ See www.pmuujwalayojana.com.

²⁰ K. Thoday and others, “The mega conversion program from kerosene to LPG in Indonesia: lessons learned and recommendations for future clean cooking energy expansion”, Energy for Sustainable Development, vol. 46 (December 2018), pp. 71–81.

²¹ World LPG Association, Kerosene to LPG conversion programme in Indonesia, 2018.

experienced by vulnerable populations including children, the elderly, and low-income residents. Approximately 100,000 people benefited from these medical subsidies.

32. In 1991, India established emissions limits for two-wheeled motor vehicles, which make up the majority of registered vehicles. These regulations have been progressively tightened and will be equivalent to European standards in 2020.²²

33. Estonia piloted free public transit in Tallinn, its capital, in 2013 and recently extended the system across the whole country. There are approximately 100 public transit systems in the world offering free fare programmes.

34. Curitiba, a large Brazilian city, has built an extensive rapid bus system. In 2013, a plan to add 300 kilometres of bicycle paths was launched. These transport initiatives have contributed to making life expectancy in Curitiba two years longer than the national average and to relatively low infant mortality.²³

35. China's air quality is improving as a result of strong laws, policies, and actions. China strengthened its Law on the Prevention and Control of Atmospheric Pollution Control and invested hundreds of billions of dollars to improve air quality. The government is implementing a Three-Year Plan on Defending the Blue Sky, with specific targets for reducing air pollution by 2020. Levels of particulate matter in 74 cities decreased 33 percent in four years.²⁴ China also achieved substantial reductions in nitrogen oxides and sulphur dioxide. Cleaner air is linked to significant declines in infant mortality.²⁵

36. Shenzhen, in southern China, has grown from a town of 30,000 in 1980 to a megalopolis of 12 million, but managed to maintain 45% of the metropolitan area in green space. Shenzhen converted its entire municipal bus fleet—more than 16,000 buses—to fully electric, making a significant contribution to improving urban air quality.

37. Egypt's Cairo Air Improvement Project succeeding in relocating Cairo's largest lead-smelting factory to an isolated industrial zone outside the city. As a result, the project successfully reduced the level of lead in the city's air by 75 percent. Mexico required businesses to clean up, relocate, or close down; enforced rules requiring cleaner fuels; placed restrictions on private vehicle use, and strengthened public transit systems. Air quality in Mexico City is still not ideal, but has improved, with reductions exceeding 70 percent in lead, ozone, and particulate matter since 1990.

38. Emissions standards for stationary sources and motor vehicles established by the Philippine Clean Air Act of 1999 contributed to a 49 percent reduction in the level of coarse particulate matter (PM10) from 2011 to 2018 and a slight decrease in levels of fine particulate matter (PM2.5).

39. North Macedonia's efforts to decrease air pollution were successful in the period 2006–2016, because of reduced use of fossil fuels in electricity production and the heating sector. Since 2013, there have not been any exceedances of the limit values for concentrations of nitrogen oxides, but values close to the limit at stations affected by frequent traffic indicate the need for further action.

40. Emissions of key air pollutants decreased significantly in Malta between 1990 and 2016, including declines of 60 percent for Sulphur oxides, 26 percent for nitrogen oxides, and 41 percent for fine particulates. There were no violations of EU air quality standards in 2017. Malta offers free public transport for students, encourages bicycle use, and subsidizes

²² Impacts of World-Class Vehicle Efficiency and Emissions Regulations in Select G20 Countries. The International Council on Clean Transportation. Jan 2017.

²³ WHO, *Inheriting a Sustainable World?*

²⁴ J. Huang, X. Pan, X. Guo and G. Li. 2018 "Health Impact of China's Air Pollution Prevention and Control Program," *Lancet Planet Health* 2,7: e313-23.

²⁵ S. Tanaka. 2015. "Environmental regulations on air pollution in China and their impact on infant mortality," *Journal of Health Economics* 42: 90-103.

electric vehicles through a registration tax waiver, grants and a five-year exemption from the annual licence fee.

41. In Europe, a series of legal developments has established that European citizens have an enforceable right to breathe clean air.²⁶ In 2008, the European Union amended its rules governing air quality.²⁷ Many States are not in compliance with the new rules. Successful lawsuits based on violations of air quality standards have been brought by civil society organizations including ClientEarth in the United Kingdom of Great Britain and Northern Ireland, Friends of the Earth in France, Deutsche Umwelthilfe in Germany and others in Austria, Czechia and Poland.²⁸

42. The Economic Commission for Europe Convention on Long-range Transboundary Air Pollution is an excellent example of regional cooperation. The Convention was signed in 1979, entered into force in 1983 and is now accompanied by eight protocols. Fifty-one parties from three continents have collaborated to set emission reduction targets, monitor compliance, build capacity and raise awareness. Sulphur dioxide emissions in the region have declined 70 per cent since 1990, while nitrogen dioxide emissions fell 40 per cent.²⁹ The 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, as amended in 2012, is the first legally binding agreement containing obligations to reduce short-lived climate pollutants.

2) A safe climate

Laws and policies

43. It is important for States to ensure that targets incorporated in their domestic climate change laws and policies are consistent with the commitments made in their NDCs under the Paris Agreement. An analysis published in 2018 revealed that targets in national laws and policies were consistent with NDCs in only 17 States, including Algeria, Canada, Costa Rica, Ethiopia, Guatemala, Indonesia, Japan, North Macedonia, Malaysia, Mexico, Montenegro, Norway, Papua New Guinea, Peru, Samoa, Singapore, and Tonga.³⁰

44. Mexico's General Law on Climate Change (2012) specifically states that it is intended to guarantee the constitutionally protected right to a healthy environment. In 2018, Mexico's Parliament amended the law to make it compatible with the Paris Agreement, recognizing the need to keep global temperature rise to within 2°C above pre-industrial levels and ideally to keep the increase below 1.5°C.

45. Uruguay's National Climate Change Policy (2017) offers a model for incorporating broad public participation and human rights. The policy was developed in a process that included more than 100 public, private and organized civil society institutions who agreed on the country's priorities and contributed to drafting the policy. As well, the policy has a strong emphasis on human rights, as its objective is to "contribute to the sustainable development of the country, with a global perspective, of intra and intergenerational equity and human rights, seeking a more resilient, less vulnerable society with greater capacity to adapt to climate change."

46. Mitigation policies that have proven effective include building codes, appliance standards, regulations governing industry energy efficiency, renewable portfolio standards and feed-in tariffs for electricity production, fuel efficiency standards, smart urban planning,

²⁶ A. Andrews, *The Clean Air Handbook: A Practical Guide to EU Air Quality Law* (London, ClientEarth, 2015).

²⁷ Directive 2008/50/EC on ambient air quality and cleaner air for Europe.

²⁸ See www.right-to-clean-air.eu/en/.

²⁹ Economic Commission for Europe. 2017. *Towards Cleaner Air: Scientific Assessment Report 2016*.

³⁰ Grantham Research Institute on Climate Change and the Environment and the World Resources Institute. 2018. *Policy Brief: 'Aligning national and international climate targets'*

and vehicle fee-bates (point of sale fees on polluting vehicles and rebates for cleaner vehicles).³¹

47. Costa Rica's National Decarbonisation Plan aims to achieve net zero emissions by 2050 through transformations in the transportation, agriculture, waste management and forestry sectors.³² This ambitious plan is based on the principles of inclusion, respect for human rights, and gender equality. In the transport sector, Costa Rica's largest source of emissions, all buses and taxis will run on electricity by 2035. By 2050, all transport will be 100 percent electric. Currently, more than 95 percent of electricity production in Costa Rica comes from renewable resources; this will reach 100 percent by 2030. Other initiatives include development of resilient, low-emission buildings; green tax reform; continued expansion of forest area; and the implementation of farming practices and technologies that reduce emissions.

48. More than forty countries, from Canada to India, price carbon emissions, either through a tax or an emissions trading system.³³ Instead of treating the atmosphere as a free garbage can, carbon prices create a cost for emissions (implementing the polluter pays principle) and spur economy-wide investment in low and zero carbon alternatives. The European Union's Emissions Trading System, which covers a large proportion of industrial emissions, is expected to reduce emissions from covered sectors by 40 percent from 1990 levels by 2030. In 2018, Iceland increased its carbon tax by 50 percent, and will continue to increase the tax by 10 percent annually. In 1991, Sweden was one of the first countries to implement a carbon tax. Introduced as a levy on all fossil fuels at a rate of 24 Euros per tonne of carbon dioxide emitted, the tax increased steadily over the years to 114 Euros in 2019. Revenues from the tax are used to finance other climate actions.

49. In 2017, Fiji established the Environment and Climate Adaptation Levy (ECAL). Revenue collected from this tax is intended to fund activities that protect the environment, reduce Fiji's carbon footprint, and enable communities to adapt to climate change. The levy applies to a variety of goods and services including plastic bags, hotels, restaurants, bars, large engines, very high-income earners (10 percent on income above \$F270,000/year), and yacht docking fees. It generates more than \$F100 million annually.

50. Despite being the world's largest GHG emitter, China deserves credit for leading the transition to low-carbon technologies, having recognized that this shift offers multi-trillion-dollar economic opportunities. China leads the world in solar electricity generation, wind electricity generation, installed kilometres of high-speed train networks, electric vehicle sales, electric vehicle charging stations, and electric bicycle sales. Effective government policies have played a key role in China's progress, including subsidies and a zero-emission vehicle mandate, which requires manufacturers to meet rising sales quotas for clean energy vehicles.

51. Japan's renowned Top-Runner program mandates continuous improvement in the energy efficiency of products ranging from vehicles to appliances. Regulators identify the most efficient product in each category and then require all manufacturers of similar products to achieve that level of efficiency by a given deadline.

52. Bulgaria's Energy Efficiency and Renewable Sources Fund provides financing, credit guarantees and technical advice to companies to assist in saving energy or generating clean energy. China's Top 10,000 program assists businesses to improve energy efficiency and reduce energy use.

53. National Human Rights Institutions in the Philippines, Morocco, and Scotland have demonstrated leadership in integrating human rights and climate change. The Scottish NHRI worked with multiple partners to ensure that a human rights-based approach to climate

³¹ H. Harvey et al. 2018. *Designing Climate Solutions: A Policy Guide for Low-Carbon Energy*. Washington: Island Press.

³² <https://presidencia.go.cr/wp-content/uploads/2019/05/National-Decarbonization-Plan-Costa-Rica.pdf>

³³ World Bank Partnership for Market Readiness. 2017. *Carbon Tax Guide: A Handbook for Policy Makers*.

change was implemented in national policies. Local branches of the Moroccan NHRI hosted sessions on issues related to climate change and environmental rights in schools. In response to a complaint from survivors of Typhoon Hainan, the NHRI of the Philippines carried out an investigation concluding that the fossil fuel companies responsible for the majority of historical greenhouse gas emissions should be held liable for human rights violations caused by climate change.³⁴

54. Courts have an important responsibility in holding States and businesses accountable for fulfilling their human rights obligations in the context of climate change. In its 2017 Advisory Opinion, the Inter-American Court of Human Rights (IACHR) confirmed that the adverse effects of climate change affect human rights.³⁵ National courts in numerous countries have recognized that by failing to establish or implement adequate measures to address climate change, governments violated their human rights obligations.

55. In the Netherlands, the Urgenda Foundation and 886 Dutch citizens sued the Dutch government for failing to take adequate action to address climate change. In 2015, the Hague District Court stated that because “there is a high risk of dangerous climate change with severe and life-threatening consequences for man and the environment, the State has the obligation to protect its citizens from it by taking appropriate and effective measures.” The Court found that the government’s pledge to reduce emissions 17 percent below 1990 levels by 2020 was insufficient and ordered the State to cut greenhouse gas emissions 25 percent by 2020.³⁶

56. The Dutch government appealed and lost. In 2018, the Hague Court of Appeal confirmed the lower court decision, writing that “it is appropriate to speak of a real threat of dangerous climate change, resulting in the serious risk that the current generation of citizens will be confronted with loss of life and/or a disruption of family life ... it follows from Articles 2 and 8 ECHR [European Convention on Human Rights] that the State has a duty to protect against this real threat.” Finally, the Court observed that “it deserves further attention that the Netherlands, as a highly developed country, has profited from fossil fuels for a long time and still ranks among the countries with the highest per capita greenhouse gas emissions in the world. It is partly for this reason that the State should assume its responsibility.”³⁷

57. In a case brought on behalf of a Pakistani farmer, the Lahore High Court determined that the government’s failure to implement the National Climate Change Policy of 2012 and the Framework for Implementation of Climate Change Policy (2014-2030) offended the constitutional rights to life and dignity. The Court ordered the government to implement its own policies, particularly to protect the rights of vulnerable persons.³⁸

58. Children and youth whose voices are often ignored in political debates are increasingly turning to the judicial system to protect their rights against climate impacts. In the United States, a group of youth plaintiffs asserted that a stable climate system is a prerequisite for enjoying many rights, including the right to life. The government’s motion to dismiss the case was rejected by a Federal District Court judge who wrote “I have no doubt that the right to a climate system capable of sustaining human life is fundamental to a

³⁴ German Institute for Human Rights and CIEL. 2018. National Human Rights Institutions and the 2018 UN Climate Conference: Incorporating Human Rights in the Implementation Guidelines of the Paris Agreement.

³⁵ Inter-American Court of Human Rights, Environment and Human Rights, Advisory Opinion OC-23/17 of 15 November 2017, requested by the Republic of Colombia.

³⁶ Urgenda Foundation v. Kingdom of the Netherlands, C/09/456689 / HA ZA 13-1396, Decision of 24 June 2015.

³⁷ Netherlands v Urgenda Foundation, 2018 Hague Court of Appeal, Civil Law Division 09-10-2018, Case 200.178.245/01.

³⁸ Leghari v. Federation of Pakistan, W.P. No. 25501/2015, Lahore High Court, 4 September 2015.

free and ordered society.”³⁹ The case is ongoing. Children and youth have filed similar lawsuits in all fifty US states.

59. In Colombia in 2018, the Supreme Court ruled in favour of 25 young people who had filed a lawsuit to protect their constitutional rights to life, food, water, and a healthy environment from deforestation and climate change. The court upheld the children’s rights and ordered the Colombian government to work with the youth to develop an effective plan to halt deforestation in the Amazon.⁴⁰

60. Lawsuits alleging violations of human rights connected to inadequate government responses to climate change have also been filed in other States including Belgium, Canada, France, Germany, Ireland, Norway, and Switzerland.⁴¹

Phasing out fossil fuels

61. In 2015, the Swedish Government created Fossil Free Sweden, a program intended to promote and advance the vision of all actors in society working to make Sweden one of the world’s first countries to be independent from fossil fuels. The program encourages industries and businesses to prepare their own roadmaps for becoming fossil fuel free. Thus far, more than a dozen roadmaps have been submitted to government and more are in progress.⁴²

62. An Australian court rejected a proposed coal mine because of climate change concerns, observing that the proposed mine is in the wrong place at the wrong time, “because the GHG emissions of the coal mine and its coal product will increase global total concentrations of GHGs at a time when what is now urgently needed, in order to meet generally agreed climate targets, is a rapid and deep decrease in GHG emissions.”⁴³

63. Hydraulic fracturing or fracking for oil and gas can contaminate water, cause earthquakes and emit large volumes of methane, a powerful greenhouse gas. A number of jurisdictions have banned fracking or imposed a moratorium on this practice, including Bulgaria, the Czech Republic, France, Ireland, Germany, Romania, Scotland, Tunisia, Uruguay, and Wales. Sub-national governments in Canada, the United States, Australia, and Spain have also banned fracking. In 2019, the United Kingdom’s policy supporting fracking was overturned by the High Court for failing to consider the climate impacts of this controversial practice. The United Kingdom government subsequently imposed a ban on fracking.

64. In 2019, the European Investment Bank, one of the world’s largest multilateral financial institutions, announced that it would eliminate financing for oil, gas, and coal projects after 2021, redirecting its investments to projects that solve, rather than exacerbate, the climate crisis. A growing number of major European banks no longer finance coal mining or coal-fired electricity projects, including ABN AMRO, BNP Paribas, BPCE/Natixis, Crédit Agricole, ING, and Société Générale. BNP Paribas also no longer finances Arctic oil and gas projects, oil sands projects, fracking for oil and gas, or companies with significant fracking activities.

³⁹ *Juliana v. United States*, (2016), Case No. 6:15-cv-01517-TC, US District Court, District of Oregon, 10 Nov. 2016, p. 32.

⁴⁰ *Demanda Generaciones Futuras v. Minambiente*, Supreme Court of Colombia, Decision of 5 April 2018.

⁴¹ For further details of all climate lawsuits see Columbia University’s climatecasechart.com

⁴² Contribution by Sweden to the Call for Input No. 1: Questionnaire on Climate Change and Human Rights: A Safe Climate put forward by Mr David Boyd, the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, in his letter to Permanent Missions to the UNOG dated 11 April 2019.

⁴³ *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7, Preston CJ, para. 699.

Clean and green electricity

65. Costa Rica, Iceland, Indonesia, Italy, Kenya, Mexico, and the Philippines are among the leaders in producing emissions-free geothermal electricity.

66. In 2012, Denmark enacted the Danish Energy Agreement for 2012-2020, a policy to promote a low-carbon energy system that completely replaces fossil fuels with renewable energy by 2050. Denmark is expected to exceed its target of having 30 percent of their energy supply come from renewables by 2020, reaching 40 percent instead.⁴⁴ A wind farm is being developed in the Baltic Sea off the coast of the Island of Møn which will generate enough electricity to power 600,000 homes.⁴⁵ The transition to renewable energy sources in Denmark not only reduced greenhouse gas emissions but stimulated a green economy, contributing to a healthier and sustainable Denmark.

67. Between 2005 and 2016, solar electricity generating capacity in Italy grew from 34 MW to 19,283 MW, while wind electricity generating capacity grew from 364 MW to 9,800 MW. This rapid growth resulted from supportive government policies including the Conto Energia program, 2009 Italian National Renewable Energy Action Plan, which provided subsidies for solar and wind.

68. Uruguay achieved a remarkably rapid transformation of its electricity supply through extensive public and private investment in renewable energy, amounting to more than \$US 7 billion between 2010 and 2016.⁴⁶ In 2008, Uruguay adopted a national long-term strategy to shift from fossil fuels to renewable energy. Its comprehensive National Energy Plan for 2005–2030 was ratified by Parliament in 2010, with goals including: diversify the energy mix of sources and suppliers; reduce costs resulting from dependence on fossil fuel; and increase the use of renewable energy. The National Energy Plan surpassed its initial targets. In 2016, over 97 per cent of electricity in Uruguay came from renewable resources, including 56 percent from hydroelectricity, 22 percent from wind, 18 percent from biomass, and 1 percent from solar.

69. Niger is implementing a major solar electricity initiative to increase energy access in poor rural and peri-urban areas. In 2017, the Government exempted solar and other renewable energy technologies from import taxes. One innovative element of the initiative is the development of energy cabins, stand-alone assemblies of solar panels, batteries, and control systems with access points for electricity purchase and distribution. The first energy cabin is a 15kW solar plant providing electricity to a range of micro, small, and medium enterprises and local households, displacing demand for electricity from more expensive and polluting diesel generators.

70. Cuba has an ambitious renewable energy investment plan that includes 13 wind projects, solar farms with a generating capacity of more than 700 megawatts, 74 small-scale hydro-electric projects, and 19 biomass projects (using waste material from the sugar industry). Similarly, Honduras and Peru are making major investments in wind, solar, geothermal, biomass, and hydroelectric energy. The UK's share of renewable energy in total final energy consumption grew by 1 percentage point annually on average since 2010 – more than five times the global average over the same period.⁴⁷

71. Morocco is rapidly developing solar electricity. As of 2018, Morocco produced 35% of its electricity output from renewable energy sources. Morocco aims to generate 52% of

⁴⁴ Danish Energy Agency, 2018.

⁴⁵ Government of Denmark, no date.

⁴⁶ Contribution by Sweden to the Call for Input No. 1: Questionnaire on Climate Change and Human Rights: A Safe Climate put forward by Mr David Boyd, the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, in his letter to Permanent Missions to the UNOG dated 11 April 2019.

⁴⁷ International Energy Agency, World Bank, et al. 2019. Tracking SDG 7: The Energy Progress Report 2018.

its electricity from renewable energy by 2030, in large part by solar energy. Id Mjahdi is one of the first African villages where all the infrastructure is powered by solar energy

72. Mauritius is implementing an innovative solar program for poor and vulnerable families, providing more than 10,000 poor households will be provided each with free photovoltaic systems. Each household receives a certain amount of free electricity, and the remainder of electricity generated is sold through the electricity grid to other consumers, with the revenue used to amortize the cost of the system.

73. Mongolia's Government set a goal of supplying 100,000 herding households in rural areas with solar panels. The effort was a qualified success: it is estimated that 70 per cent of nomadic Mongolian households have access to green electricity between 1999 and 2010. More generally, the 2012 Law on Renewable Energy set favourable feed-in tariffs for electricity generated by wind power, which have assisted in the development of the Salkhit Wind Farm project, the first commercial wind farm project in Mongolia, which began operating in 2013.

74. Peru spent more than \$200 million on small-scale solar PV systems by the end of 2016 in an effort to ensure 95 percent of households have access to electricity. In Bangladesh, small-scale solar photovoltaic systems have been sold to millions of poor families at subsidized rates, enabling them to gain access to electricity.

75. Working with scientists and researchers, Egypt has developed a solar atlas identifying the most promising areas for the development of large-scale solar projects, is building what it hopes will be the biggest solar energy facility on the planet, Benban.

76. Since the enactment of the Energy Transition for Green Growth Act, France has rapidly increased its use of renewable energy resources. In 2015, France funded the 300 MW Cestas Solar Farm, covering 250 hectares of land with one million solar panels. In 2015 alone, France increased renewable energy production by more than 23 percent, building 1,000 MW of new wind capacity and 900 MW of new solar capacity.

77. Benin is developing four biomass power plants with a combined capacity of 4MW that will generate electricity by burning agricultural waste. Supported by the Global Environment Facility's Least Developed Countries Fund and UNDP, the project also involves developing sustainable management practices for 100,000 hectares of wood-supplying zones and providing 10,000 poor families with improved cookstoves.⁴⁸

Towards zero emission transport

78. To reduce greenhouse gas emissions, urban design must emphasize mixed-use communities, high density near transit hubs and along transit corridors, and infrastructure that prioritizes pedestrians, cyclists and public transit over private vehicles. Bogota (Colombia), Curitiba (Brazil) and Guangzhou (China) have excellent rapid bus systems with dedicated bus lanes. Estonia piloted free public transit in its capital in 2013 and recently extended the system across the whole country. There are approximately 100 public transit systems in the world offering free fare programs, from Dunkirk, France, to Changning, China. Copenhagen and Amsterdam are renowned for outstanding bicycle infrastructure, leading to 40-50 percent of commuters riding bikes. Among cities renowned for excellent public transportation are Tokyo, Hong Kong, Singapore, New York, Seoul, Paris, Madrid, London, Shanghai and Berlin. Shenzhen, in southern China, converted its entire municipal bus fleet – more than 16,000 buses – to fully electric, dramatically reducing emissions. Stockholm combines excellent infrastructure, reliable public transit, and a tax on vehicles entering the city center, so that over ninety percent of commuters walk, cycle or use public transit.

79. Estonia is making substantial investments to enable all passenger train railroads to be electrified by 2028. In addition to major reductions in greenhouse gas emissions, electric

⁴⁸ See <https://www.thegef.org/news/building-sustainable-energy-future-benin>

trains reduce air pollution, noise, and fuel costs. Part of the upgrade will include better access for persons with disabilities. The increased comfort and cleanliness of the new trains have contributed to a 50 percent increase in passengers since 2013. A similar project is underway in Latvia.

80. Portugal's Public Transport Tariff Reduction Support Program reduced the cost of public transportation, leading to increased ridership, less congestion, improved air quality, and reduced greenhouse gas emissions. Portugal also invested in subway expansion, high performance low-emission buses, improved bicycle infrastructure, subsidies for electric bicycles, and expanded charging infrastructure for electric vehicles. Estonia and Brazil are widely praised for public transit initiatives in cities such as Tallinn and Curitiba.

81. Norway has aggressive policies in place to drive a transition to electric mobility, including substantial tax breaks (exemptions from value added tax and registration tax for fully electric vehicles), free parking, and exemptions from road tolls and car ferry charges. The Norwegian government has funded 10,000 publicly available charging points across the country to enable electric cars to take long trips. As a result, Norway has achieved a remarkably high proportion of electric vehicle sales—roughly 50 percent in the first half of 2019 and 10 percent of all Norwegian cars on the road are electric vehicles, the highest number in the entire world. Norway's goal is for all new car purchases to be 100 percent plug-in electric vehicles by 2025.

82. Throughout the European Union, States impose vehicle registration taxes and fuel taxes that encourage the purchase of clean vehicles and discourage the purchase of polluting models. For example, France's Bonus-Malus program charges fees of up to 8,000 Euros for polluting vehicles and offers rebates of up to 6,000 Euros for clean vehicles. Singapore operates a similar vehicular emissions scheme that provides for surcharges or rebates on new and imported vehicles based on their environmental impact.

83. A growing number of countries (e.g. China, Denmark, Germany, India and the United Kingdom), plus sub-national jurisdictions have enacted laws or pledged to phase out the sale of internal combustion vehicles, by dates ranging from 2020 to 2040.⁴⁹ For example, in British Columbia (Canada) the Zero Emissions Vehicle Act prohibits the sale of gas and diesel motor vehicles starting in 2040. Norway aims for all new passenger vehicles sales to be zero-emission by 2025 but has not yet made this target legally binding.

84. Iceland is transforming its transport sector by banning new registration of diesel and gasoline cars after 2030, providing incentives for electric cars (e.g. exempt from value added taxes, a government fund that finances charging stations) and considering a system of rebates to accelerate the decommissioning of high-polluting cars. Approximately 17 percent of all cars sold in Iceland were electric in 2018, the second highest per-capita electric car sales after Norway. Iceland is also improving bicycle infrastructure, planning to use electric ferries between the mainland and Westman Islands, and bringing clean electricity to docks to reduce emissions from ships.

85. Peru is tackling emissions from transportation by expanding public transport, regulating vehicle emissions, building bike lanes, decommissioning older buses, and promoting the use of electric vehicles. Andorra is taking similar steps to reduce emissions from transportation.

Energy efficiency

86. Among the large energy-intensive developing economies, China and Indonesia stand out for achieving annual energy efficiency improvements exceeding 3 percent.⁵⁰ Following

⁴⁹ Center for Climate Protection, 2019. Actions by countries to phase out internal combustion engines.

⁵⁰ International Energy Agency, World Bank, et al. 2019. Tracking SDG 7: The Energy Progress Report 2018.

the enactment of a new law in 2009, Russia intensified efforts to improve energy efficiency in the manufacturing, housing, transport, and agriculture sectors.⁵¹

87. New building codes enacted by the European Union, California, and Vancouver (Canada) require new residential and commercial construction to achieve near-zero carbon emissions in building operations beginning as early as 2020. Using advanced technology and construction techniques, the new standards mean that buildings equipped with solar panels will generate all of the electricity needed by their occupants (i.e. net-zero buildings).

88. Nature-based building solutions offer extraordinary potential. Eastgate Centre, an office and shopping complex in Harare, Zimbabwe, emulated elements of a termite mound, enabling the building to be cooled using natural air flows, without any air conditioning. This reduced energy costs by 90 percent.

89. Policies and programs to increase the efficiency of existing buildings are essential, and if well designed can both reduce greenhouse gas emissions and alleviate energy poverty by targeting low-income households. Greece, Hungary, and Slovenia offer encouraging examples. Greece enacted a new law (4513/2018) that empowers citizens, communities and local governments to directly participate in the transition to clean energy by promoting renewable energy, energy efficiency, and innovation in the energy sector. For example, households, businesses, farmers, and local governments are authorized to create their own community solar parks, which can reduce or eliminate electricity bills and generate revenue if energy produced exceeds energy consumed. In Hungary, a variety of energy efficiency programs (e.g. Climate Friendly Home Program, Green Investment Scheme) have resulted in improvements to approximately 800,000 homes, reducing emissions by millions of tonnes each year.⁵² Similar efforts are underway in North Macedonia, where subsidies totalling close to one million Euros annually for energy efficiency in households and renewable energy.

90. Sweden has almost completely eliminated the use of fossil fuels to heat buildings, a dramatic reversal from fossil fuel dependence as recently as the early 1990s. Major improvements in energy efficiency played a key role, and heat is now provided by district energy systems and biofuels.

91. Many countries, led by India and Indonesia and also including Benin, Ecuador, Guatemala, Honduras, and Uganda, are making major efforts to reduce polluting cookstoves with cleaner fuels and technologies, which not only results in cleaner air and improved health (especially for women and children), but also reduces greenhouse gas emissions.

Healthy and sustainable forests

92. A recent study estimated that restoring and rehabilitating the world's lost and degraded forests could remove up to two-thirds of the greenhouse gas emissions released into the atmosphere by human activities.⁵³

93. Efforts to restore and expand forests are underway in dozens of States including El Salvador, Ireland, Serbia, Turkmenistan. In Azerbaijan, from 2000 to 2017, afforestation and reforestation measures were carried out on 150,000 hectares and almost 100 million trees were planted.

94. Many developing countries—Brazil, Costa Rica, and Kenya, for example—are pursuing to national REDD+ strategies. REDD+ is an international framework whose name

⁵¹ Federal Law No. 261-FZ “About energy saving and increase in energy efficiency” (2009).

⁵² Contribution by Cuba to the Call for Input No. 1: Questionnaire on Climate Change and Human Rights: a Safe Climate put forward by Mr David Boyd, the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, in his letter to Permanent Missions to the UNOG dated 11 April 2019.

⁵³ R. Chazdon and P. Brancalion. 2019. Restoring forests as a means to many ends, *Science*, Vol. 365, Issue 6448, pp. 24-25

stands for 'reducing emissions from deforestation and forest degradation, conservation of existing forest carbon stocks, sustainable forest management and enhancement of forest carbon stocks'. In essence, the program is intended to preserve and strengthen the role of tropical forests in mitigating climate change, facilitating adaptation, and promoting human development. From 2006 to 2014 the EU and its member states provided over 3 billion Euros in financing to developing countries to support REDD+ activities. It is essential that human rights safeguards be implemented to ensure that forest protection supports, rather than harms, the rights and interests of Indigenous peoples and local communities that depend on forests for livelihoods and culture. This involves obtaining the free, prior and informed consent of Indigenous peoples as set forth in the UN Declaration on the Rights of Indigenous Peoples.

95. Guyana and Norway created a partnership in 2009 whose goal is to promote development in Guyana without an increase in deforestation. Guyana's tropical forests cover 87 percent of its territory, and its main success has been keeping its deforestation rate very low. The performance-based payments of up to \$250 million over five years are used for programs that involve recognizing the land rights of Amerindian communities in the interior of the country and awarding them official land title, as well as for low-carbon development projects.

96. Between 1990 and 2015, forest cover in Gabon increased by 4.5 percent, and forests represented almost 90 percent of total land in 2015. Gabon established 13 new national parks that are protected from economic exploitation. Although Gabon contains only 12 percent of the rainforests in the Congo Basin, it is reported that the country hosts almost 60 percent of Africa's surviving forest elephants. In 2019, Norway agreed to pay Gabon \$150 million for reducing its greenhouse gas emissions from deforestation and degradation, and to support Gabon in its efforts to meet its commitments under the Paris Agreement.

97. Cuba is continuing an ambitious reforestation program that has increased the area of the country covered by forests from 14 percent several decades ago to 31 percent in 2017.⁵⁴

98. Norway's International Climate and Forest Initiative is providing billions of dollars in funding to assist States from Indonesia to Colombia reduce and eliminate deforestation. This funding not only reduces greenhouse gas emissions, but also helps conserve the rich biodiversity of tropical forests.

99. Uruguay's Forest Law includes provisions that minimize deforestation that would cause greenhouse gas emissions.⁵⁵ For example, the cutting of trees that threaten the survival of native forests is prohibited. Similarly, the Honduras has a National Strategy Against Illegal Logging, a National Strategy for the Reduction of Emissions due to Deforestation and Degradation of Forests, and a National Program for the Restoration of Degraded Ecosystems (which includes reforestation).

100. There is a positive correlation between secure indigenous land tenure and improved conservation outcomes, including reduced deforestation, which contributes to lower global carbon dioxide emissions (A/71/229). For example, areas in the Brazilian Amazon where the forest rights of indigenous peoples are recognized enjoy a deforestation rate that is eleven times lower than areas where these rights lack recognition.⁵⁶

101. In 2019, Ethiopia launched a "Green Legacy" campaign, a reforestation project that aims to plant 4 billion new trees every year. The Government declared a new national holiday (Green Legacy Day) and challenged citizens to plant 200 million trees in celebration. The

⁵⁴ Contribution by Hungary to the Call for Input No. 1: Questionnaire on Climate Change and Human Rights: A Safe Climate put forward by Mr David Boyd, the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, in his letter to Permanent Missions to the UNOG dated 11 April 2019.

⁵⁵ Law No. 15,939.

⁵⁶ World Resources Institute and Rights and Resources Institute. 2014. *Securing Rights, Combating Climate Change: How Strengthening Community Forest Rights Mitigates Climate Change*.

day was highly publicized and on July 29, 2019, Ethiopians planted hundreds of millions of tree seedlings.

102. Between 1990 and 2015, forest cover in Gambia increased by 10.4%, largely because Gambia implemented a program to reduce deforestation by gradually transferring ownership and management of forests from government agencies to more than 500 local communities.

103. Mexico reduced its rate of loss of primary forests more than ten-fold since 2000, from 2 percent annually in the 1990-2000 period to 0.1 percent in the 2005–2010 period. The rate of deforestation continued to decline from 2010-2015.⁵⁷

Agriculture

104. Syria is attempting to reduce greenhouse gas emissions from agriculture through crop rotations, using agricultural waste to produce energy, rehabilitating degraded lands, and shifting to renewable energy.

105. Côte d'Ivoire has started using fuel briquettes from rice husks (the hard covering of the grains) which has benefits for waste management, forests, climate change and air pollution.

Adaptation

106. Bangladesh and India have substantially reduced the number deaths and other adverse effects associated with tropical cyclones by adopting an integrated approach that: coordinates actions across ministries with stakeholders from national to local levels; empowers communities; provides effective early warning; and ensures access to protective infrastructure. When Cyclone Fani hit in 2019, millions of people in Bangladesh and India were safely evacuated and provided with shelter, food and water.

107. In cooperation with the World Food Programme and local communities, Egypt developed a system to provide early warnings of extreme weather events. In 2016 and 2017, this early warning system helped farmers of wheat, sorghum and maize reduce their losses from heatwaves by around 70 percent. Early Warning, Early Action systems have also been used effectively in Ethiopia, Kenya and Somalia.

108. The R4 Rural Resilience Initiative, launched by the World Food Programme and Oxfam in 2011, offers an integrated package of gender-responsive financial services and community assets to address climate variability and extreme weather. The initiative has demonstrated positive impacts, including productivity gains and reduced food shortages, in Ethiopia, Malawi, Senegal and Zambia. In Eswatini, the Lower Usuthu Smallholder Irrigation Project promotes sustainable and climate-smart agriculture that anticipates changing climatic conditions.

109. Mauritius passed a new law requiring development of a national disaster risk reduction and management plan.⁵⁸ The plan must identify measures to prevent disasters and reduce their impact, prescribe responses, and assign responsibilities to various agencies and stakeholders. This will complement the Community Disaster Response Programme that enhances preparedness, builds understanding of risks and vulnerabilities, and develops new partnerships. Disaster simulation exercises were used to improve community preparedness in areas vulnerable to flooding, high waves and tsunamis.

110. Mauritania allocates more than 15 percent of its environment budget to building infrastructure to adapt to climate change. One project is striving to protect the city of

⁵⁷ Boucher et al. 2014. Deforestation Success Stories: Tropical nations where forest protection and reforestation have worked. CONAFOR. 2018. Informe de rendicion de cuentas de conclusion de la administracion 2012-2018.

⁵⁸ National Disaster Risk Reduction and Management Act 2016.

Nouackchott from both sea level rise on one side and the advancing sand dunes of the Sahara Desert on the other.

111. Togo is implementing its 2017 National Climate Change Adaptation Plan, which involves; mainstreaming adaptation into sector policies and programs and capacity development at national and sub-national levels; developing an integrated coastal management planning and management to restore degraded ecosystems and enhance livelihoods of coastal communities; and improving production in the agriculture, forestry and fisheries sectors while protecting vulnerable ecosystems.

112. The Health and Climate Change Country Profile Project, operated by the World Health Organization, gathers and publishes evidence on climate hazards and health impacts while assessing the health sector's response to climate change. The WHO, in partnership with Fiji, also operates a special initiative on climate change and health in Small Island Developing States.

113. German states affected by the phasing out of coal mining will receive federal assistance of more than \$45 billion for restructuring, retraining and job creation. In Spain, a comprehensive just transition plan will support communities where coal mines will be shut down over the next decade. Canada recently created a Task Force on Just Transition for coal power workers and communities. New Zealand and Scotland also have plans in place to assist workers and communities dependent on coal, oil, and gas as their industries decline.

Climate Finance

114. Germany and Norway are among the leading contributors to climate finance and were the first States to announce their replenishment pledges for the Green Climate Fund, both roughly doubling their contributions (to \$1.8 billion and \$415 million, respectively). With a total climate finance contribution of \$US9.5 billion in 2016, Germany is a major supporter of innovative initiatives including the NDC Partnership, the Global Commission on Adaptation, the InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions, and the Development and Climate Alliance. The NDC Partnership, led by Germany's Ministry for Economic Cooperation and Development and Ministry for the Environment, Nature Conservation, Building and Nuclear Safety, provides financial and technical support to assist developing countries to implement their Nationally Determined Contributions to the Paris Agreement. Germany also requires a gender analysis for all climate projects in which it invests. Monaco deserves credit for tripling the amount of its contribution to the Green Climate Fund between 2015 and 2018.

115. Rwanda's ground-breaking Green Fund is intended to help the nation achieve its vision of a low-carbon and climate-resilient economy by 2050. The fund, the largest of its kind in Africa, supports public and private green economy projects with the potential for transformative change. The fund has mobilized more than \$US100 million to date and projects financed have created 137,785 green jobs, enabled 61,592 households to gain access to clean electricity; helped support 106,980 people in adapting to the effects of climate change, protected 19,642 hectares of land against soil erosion, protected 21,145 hectares of watersheds, and rehabilitated 42,016 hectares of land.⁵⁹ The Green Fund received the United Nations 2018 Momentum for Change Award in the financing category for its outstanding contribution to addressing climate change.

116. Despite its small size, Luxembourg plays an important contribution to climate finance. Luxembourg invested a total of €120 million in international climate aid between 2014 and 2020. In addition, Luxembourg's "Forestry and Climate Change Fund," launched in 2017, aims to help farmers to restore and sustainably manage rainforests.

117. Flows of climate finance should be designed to benefit women and other potentially vulnerable populations.⁶⁰ UN-Women promotes gender-responsive climate action through

⁵⁹ See www.fonerwa.org

⁶⁰ Green Climate Fund and UN-Women. 2017. Mainstreaming Gender in Green Climate Fund Projects.

initiatives such as Women’s Entrepreneurship for Sustainable Energy, Women’s Empowerment through Climate-Smart Agriculture and Addressing the Gender Inequality of Risk in a Changing Climate.

118. In 2018 Costa Rica launched the For All Coalition, seeking to integrate human rights and gender equality in climate change and other environmental contexts (UNEP/EA.4/L.21).

3) **Healthy and sustainably produced food**

119. The latest estimates indicate that approximately 33 percent of global food production is wasted, with more than half of this waste occurring in wealthy countries.⁶¹ France has one of the world’s most progressive approaches to addressing the problem of food waste with a law that requires supermarkets to donate unused food to charities, or send food that is no longer edible for humans as animal feed.

120. In Mali, Burkina Faso and Niger, zaï or tassa is a farming technique to restore degraded lands, catch water and increase soil fertility. Zaï are pits dug in the soil (20-30 cm long and deep and 90 cm apart) prior to planting crops to catch water and concentrate manure and/or compost. In these West African States, stone barriers built alongside fields slow down runoff water during the rainy season, improving soil moisture, replenishing water tables, and reducing soil erosion. Used in combination with zaï, the water retention capacity is multiplied five- to ten-fold, the biomass production (e.g. trees, sorghum, and millet) increases up to five times, and livestock can feed on the grass that grows along the stone barriers after the rains.

121. In Mali, the government uses local workshops as a means of disseminating sustainable agricultural practices that also benefit biodiversity. In 2018, fourteen workshops were held with 473 stakeholders on the protection of forest areas, assisted natural regeneration, stony ridges, zaï, and bush fire management.

122. With Canadian funding, Cameroon implemented a project called “Eco-Agricultural Business for the Adaptation to Changes in Climate” that offered training in innovative and sustainable farming practices, encouraged social enterprises, and provided financial incentives. The project succeeded in reaching some 2,000 poor and vulnerable smallholder farmers who adopted green technologies such as bio-fertilizers that improved their incomes and livelihoods while reducing impacts on forests and reducing the vulnerability of rural communities to climate change. The proportion of households struggling to meet food needs dropped from 22% to 3% over the life of the project while the proportion of households having sufficient food or food surpluses for the entire year rose from 38% to 78%.⁶²

123. Agroforestry incorporates trees into agricultural systems. In Tanzania, 350,000 hectares of land have been rehabilitated in the Western provinces of Shinyanga and Tabora using agroforestry; there are similar large-scale projects in Malawi, Mozambique and Zambia.⁶³ Malawi is using nitrogen-fixing trees to ensure sustained growth in maize production. More than one million of Malawi’s poorest people have benefitted from this approach.

124. Malawi’s lush climate and rich soil are well suited for agriculture, and more than three quarters of the work force are involved in farming. However, over half of all farmers in Malawi operate below subsistence levels and only 20 percent of maize farmers produce a surplus that they can sell. Malawi uses incentives and social networks to increase farmers’ knowledge of sustainable practices. Agricultural Extension Development Officers provide incentives to lead farmers—literate community leaders and early technology adopters with access to resources—and peer farmers—similar to the average farmer in the village but with

⁶¹ UN Environment. 2019. Global Environment Outlook 6: Healthy Planet, Healthy People.

⁶² See <https://www.enterprise-development.org/wp-content/uploads/DCED-GGWG-Case-study-B-ADAPT.pdf>

⁶³ Special Rapporteur on Food, A/HRC/16/49.

a willingness to try new technologies—to spread the word about innovative practices. This approach led to significant levels of adoption and increased yields.

125. Cuba has a thriving local organic food production system. Havana has more than 25,000 huertos – allotments, farmed by families or small groups – and dozens of larger-scale organoponicos, or market gardens. To reduce the use of agricultural chemicals, farmers use integrated pest management, crop rotation, composting and soil conservation. Venezuela also has a large urban agriculture program.

126. Ireland introduced a Rural Environment Protection Scheme REPS in 1994 that has been proven to be effective. Farmers must follow a 5-year environmental plan in order to receive an annual payment. Among the mandatory tasks are soil testing, fencing off watercourses, and planting hedgerows. The program ensures that farming practices and production methods are updated to improve environmental outcomes.

127. Public policies and education can address the problems caused by reliance on harmful pesticides. Sweden, Norway, Denmark, Finland, France and Italy impose taxes on pesticides. Sweden reduced pesticide use by over 80 percent since 1980 by charging a special tax on pesticides, offering economic support for organic agriculture, funding research on alternatives to pesticide use, and providing mandatory education programs for pesticide users to assist them in reducing their reliance on these chemicals. Norway's pesticide tax is noteworthy for being one of the first to apply higher tax rates to products of higher toxicity.

128. France has prohibited the use of all neonicotinoid pesticides, meaning that acetamiprid, clothianidin, imidacloprid, thiacloprid, and thiamethoxam can no longer be used on crops grown in field or greenhouses.⁶⁴ According to the UN Food and Agriculture Organization, 71 percent of 100 crop species (which provide 90 per cent of global food), are pollinated by bees.⁶⁵

4) Access to safe water and adequate sanitation

129. Brazil's 2007 Law on Environmental Sanitation was developed through a multi-stakeholder process. The law highlights the importance of participatory processes to achieve the goal of universal access, focusing on poor and marginalized groups. Service providers are responsible for delivering water and sanitation services to all households in rural and urban areas, including informal settlements.

130. In 2012, Mexico granted constitutional status to the human rights to water and sanitation. Mexico then strengthened its water policy framework and significantly increased public investment in water infrastructure. The National Water Quality Monitoring Network was launched and by 2017 it had 5,028 sites, distributed throughout the country, in surface, underground and coastal waters. Up to 295 parameters are measured, including a wide range of contaminants. The results are made available to the public through the National Water Information System. Mexico's Program for the Sustainability of Drinking Water and Sanitation Services in Rural Communities reached over 1,200 small rural communities between 2014 and 2018, upgrading their drinking water and wastewater treatment systems and contributing to the progressive realization of the rights to water and sanitation for marginalized and vulnerable populations. Across Mexico, the proportion of the population with access to basic water services increased from 89 to 99 percent between 2000 and 2017, while access to at least basic sanitation jumped from 75 to 91 percent.⁶⁶ Improved infrastructure for drinking water and sanitation has contributed to a significant reduction in levels of gastro-intestinal illness. Nevertheless, significant challenges remain, and Mexico

⁶⁴ Government of France. 2018. Ban on neonicotinoid insecticides: France is leading the way in Europe, September 4th, 2018. <https://www.gouvernement.fr/en/ban-on-neonicotinoid-insecticides-france-is-leading-the-way-in-europe>

⁶⁵ UNEP. 2010. Global Honey Bee Colony Disorders and Other Threats to Insect Pollinators.

⁶⁶ UNICEF and World Health Organization. 2019. Progress on household drinking water, sanitation, and hygiene 2000-2017: Special focus on inequalities.

needs to revise its general water legislation to give full effect to the rights to water and sanitation.⁶⁷

131. In Romania, legislation requires the Ministry of Health, in collaboration with local governments and service providers, to monitor water quality and report cases of non-compliance to relevant authorities and the public. Romania is improving water quality monitoring in rural areas, to close the gap with urban areas.

132. The National Programme for Rural Water and Sanitation in Peru focuses specifically on improving access to water and sanitation for poor, marginalized and isolated rural populations, as well as building local capacity to manage these systems effectively. Similarly, Paraguay initiated a program requiring access to drinking water and basic sanitation to be integrated into all government housing projects and involving civil society in their design and implementation.

133. Hungary developed national legislation and a national environmental plan that addresses access to water and sanitation, prioritizing access for low-income and disadvantaged groups, and focusing on the Roma community. Affordability is addressed through cross-subsidies, State assistance and debt management programs, as well as a comprehensive disconnections policy designed to ensure that people always have access to at least minimum amounts of water for personal and domestic uses. Hungary also managed to reduce the proportion of the population using water sources contaminated with arsenic from 40 percent (2005) to 4.9 percent (2017).⁶⁸

134. Kenya's Water Act (2016) requires all profits generated by water and sanitation service providers in an area to be invested in extending these services until all residents in that area have adequate access to clean water and sanitation (s. 131). The number of Kenyans with access to at least basic water services doubled between 2000 and 2017.⁶⁹

135. Bangladesh earmarks 20 percent of its pro-poor annual development plan funds for sanitation and hygiene promotion. The government then allocates 75 percent of this budget to free latrines for families living in extreme poverty and 25 percent for promotional activities. Subsidized sanitation equipment is provided to public facilities including schools and markets.

136. Mozambique's Water Regulatory Council is involved in decisions regarding service delivery standards and affordability in order to ensure access for people in poverty, particularly in slums. The Council found that to deliver services effectively it is necessary to go beyond traditional models, understand who does not have access and why, and find solutions based on the reality on the ground. Mozambique promotes the restructuring of tariffs to improve affordability, such as deferring connection charges so they are paid over a series of billing periods.

137. A human rights-based approach is a cross-cutting pillar of the Honduras' National Adaptation Plan. Through a capacity building project in Tegucigalpa and five neighbouring municipalities, 8,988 families in vulnerable communities learned to harvest rainwater for domestic use, manage forests, and build reservoirs to prepare for droughts and control floods.

138. A poverty and environment initiative in Mauritania facilitated access to clean water for nearly 28,000 beneficiaries in eight locations. More than 12,800 households gained access to sanitation services. Local communities built more than 6,500 latrines, more than

⁶⁷ Special Rapporteur on the human rights to water and sanitation. Mexico: Country Report. A/HRC/36/45/Add.2

⁶⁸ UNICEF and World Health Organization. 2019. Progress on household drinking water, sanitation, and hygiene 2000-2017: Special focus on inequalities.

⁶⁹ UNICEF and World Health Organization. 2019. Progress on household drinking water, sanitation, and hygiene 2000-2017: Special focus on inequalities.

260 sites in the Trarza region were certified free of open defecation, and more than 6,000 students and 90 teachers were trained in hygiene and sanitation.

139. Target-setting is an important aspect of raising ambition and monitoring progress towards goals, as it influences planning and budgeting. Nepal aimed to provide universal access to both water and sanitation by 2017. Although this ambitious target was not met, Nepal did increase access to sanitation from 15 percent to 62 percent between 2000 and 2017, while access to at least basic drinking water rose from 80 percent to 89 percent.⁷⁰

140. Kyrgyzstan enacted the Water Code in 2005 to regulate the use, protection, and development of water resources and fulfil the right to water. Guiding principles of the Code include participation, sustainability, polluter pays, precaution, and openness. Kyrgyzstan's Clean Water Programme recognizes the need for more resources for operation and maintenance, and budgets additional funding specifically for repairs. Local authorities provide subsidies to households with incomes below the poverty level. The proportion of the population with access to basic water services increased from 46 to 68 percent between 2000 and 2017.⁷¹

141. In Colombia, a Canadian corporation sought government approval to build a large open-pit gold mine in a rare ecosystem called the paramo, which is the source of drinking water for millions of Colombians and home to important biodiversity. The Ministry of Environment rejected the proposal because of concerns that the mine would violate the constitutional rights to water and a healthy environment.

142. In some countries—Argentina, Bangladesh, Costa Rica, India, Nepal, Pakistan—courts have found rights to water and sanitation implicit in other constitutional rights including life, health, and dignity. Courts in Argentina, Botswana, Colombia, France, India and Indonesia have issued orders, based on the right to water, requiring governments to prevent private water supply companies from cutting off people's water and requiring governments to supply poor people with water.

143. In 2011, the Basarwa indigenous people living in a game reserve in Botswana won a lawsuit in which they argued that the Government violated their human rights by denying them access to a borehole they used for decades as a source of water. The Government had attempted to force them to move out of the game reserve. The court referred to General Assembly resolution 64/292 on the rights to water and sanitation and found that denying the Basarwa permission to use the borehole on the land where they resided violated their human rights.

144. Even where lawsuits are not successful, they can contribute to positive outcomes if combined with civil society organizations pressuring policymakers. In South Africa, residents of Phiri, Soweto filed a lawsuit, alleging that the installation of water meters requiring prepayment was unlawful and that the government's free basic water policy did not provide residents with sufficient water.⁷² Although the Constitutional Court ruled against the residents, the municipality changed its policy to provide larger volumes of free water to indigent households.

145. India distinguishes between notified slums (i.e. recognized by government authorities) and non-notified slums. In some cities, those living in notified slums are entitled to land tenure and access to city services, including drinking water. In 2012, 59% of slum settlements were non-notified. In 2014, the Bombay High Court ordered the municipal government to extend access to Mumbai's water supply to residents in non-notified slums.

⁷⁰ UNICEF and World Health Organization. 2019. Progress on household drinking water, sanitation, and hygiene 2000-2017: Special focus on inequalities.

⁷¹ UNICEF and World Health Organization. 2019. Progress on household drinking water, sanitation, and hygiene 2000-2017: Special focus on inequalities.

⁷² Mazibuko v. City of Johannesburg

The court applied a rights-based framework, ruling that the right to water is central to the right to life guaranteed by the Constitution of India.⁷³

146. In Bosnia and Herzegovina, civil war inflicted extensive damage on municipal infrastructure. Ongoing efforts to repair and upgrade water treatment and distribution systems have increased access to safe drinking water and fixed leaks that wasted large volumes of water. Projects included replacement of pumps, construction of gravity-fed transmission mains, rehabilitation of distribution networks, and active leakage detection programs. Additionally, service quality, financial performance and energy efficiency were improved. Similarly, in Yemen, UNDP has employed over 15,000 people from vulnerable households in programs to build and use water harvesting tanks.

5) **Non-toxic environments in which to live, work and play**

147. The Montreal Protocol is widely regarded as the most successful international environmental treaty ever negotiated. Every country in the world is a party to it. The protocol controls the use of approximately 100 ozone-depleting chemicals including chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), hydrofluorocarbons (HFCs), and methyl bromide. CFCs were completely phased out by 2010, while deadlines for ending the use of methyl bromide, HCFCs, and HFCs stretch as late as 2040 for some developing countries. Globally, CFC production peaked in 1988 and has fallen by 99 percent. The ozone layer has been steadily recovering at a rate of 1-3% per decade since 2000 and full recovery is expected to occur in the mid-21st century.

148. Bahrain, Jamaica, and Sierra Leone demonstrate good practices by using strong regulations and import controls to phase out ozone-depleting chemicals. More than 100 refrigeration and air conditioning technicians in Jamaica have been trained to use ozone-friendly substitutes. Sierra Leone is replacing HCFCs with natural refrigerants and other energy efficient technologies with low global warming potential.

149. Consistent with the World Health Organization's recommendation, more than fifty States (e.g. France, Kuwait) have prohibited all uses of all types of asbestos, a naturally occurring substance that causes a form of cancer called mesothelioma, increases the risk of lung cancer, and causes asbestosis, a degenerative lung disease. Some States have irresponsibly resisted efforts to add asbestos to the list of substances governed by the Rotterdam Convention.

150. Some businesses in industrialized countries continue to sell toxic products in developing countries, which is an inexcusable practice that governments should prohibit. Lead is a toxic substance that can harm anyone but has particularly devastating effects on the development of infants and children. The global phase-out of lead in gasoline, paint and other consumer items has been generally successful, generating enormous long-term health and economic benefits. Most, but not all, countries prohibit the use of leaded gasoline, restrict the use of lead in paint, and have rules limiting the use of lead in consumer products, particularly those intended for use by children. Nevertheless, some businesses in industrialized countries continue to sell lead and lead-based products in developing countries, which is an inexcusable practice that governments should prohibit. Similarly, some businesses sell extremely dirty diesel and gasoline in West Africa (containing sulphur levels hundreds of times higher than European law permits).⁷⁴

151. In 2016, Honduras processed approximately 170 tonnes of persistent organic pollutants, including polychlorinated biphenyls (PCBs) and highly hazardous pesticides, benefiting approximately 1,300,000 inhabitants of Cañada in Tegucigalpa; Río Lindo and La Lima in Cortés and Las Flores in Lempira.

⁷³ R. Bos et al. 2016. Manual on the Human Rights to Safe Drinking Water and Sanitation for Practitioners. IWA Publishing.

⁷⁴ Public Eye. 2016. Dirty Diesel: How Swiss Traders Flood Africa with Dirty Fuel.

152. The EU phased out all uses of butylbenzyl phthalate (BBP), dibutyl phthalate (DBP), diisodecyl phthalate (DIDP), and bis(2-ethylhexyl) phthalate (DEHP). After discovering polybrominated diphenyl ethers (PBDEs) accumulating in breast milk, Sweden quickly banned PBDEs domestically and led a successful global effort to add PBDEs to the list of substances prohibited under the Stockholm Convention. Levels of PBDEs in breast milk rapidly declined. Norway was one of the first States to ban the use of PFOA in all consumer products and targeted additional flame retardant and stain repellent chemicals in 2019.

153. Substances continued to be added to the elimination regime under the Stockholm Convention. In 2019, two toxic chemical groups which together total about 4,000 chemicals (dicofol and perfluorooctanoic acid and related compounds) were listed on Annex A of the Convention. Exposures to persistent organic pollutants covered by the Stockholm Convention declined dramatically in many countries following the treaty's adoption.⁷⁵

154. In 2014, Saudi Arabia's Presidency of Meteorology and Environment announced a decree giving all companies five years to meet new air, water, and noise pollution standards. All projects must meet international benchmarks standards as part of Saudi Arabia's environmental plan to protect human and environmental health. Sudan has also created strict limits for air, water, soil, and noise pollution from the oil industry.

155. Israel's Ministry of Environmental Protection's Marine Environment Protection Division implemented new regulations and increased supervision and enforcement on discharge permit holders. They also imposed large fines on polluting corporations, which has helped to deter other companies from polluting the Mediterranean. These policies led to a 95% reduction of all pollutants, including mineral oil, heavy metals, and ammonia, discharged into the Mediterranean Sea from 1998 to 2017.⁷⁶

156. During a reforestation project, Burundi replaced plastic bags with bags made from banana bark, increasing the income of poor households (by \$55 per year), reducing pollution and avoiding the use of an estimated 3 million plastic bags. Similarly, the Samoa Women's Association of Growers make traditional baskets from coconut leaves that can be used for shopping.

157. Virgin plastic (made from fossil fuels) is cheaper than recycled plastic. For this reason, regulations are needed to require recycled content in packaging and products to create markets for the recycled material. In the EU, plastic beverage containers manufactured from polyethylene terephthalate ('PET bottles') must contain at least 25 percent recycled plastic by 2025 and 30 percent by 2030.

158. Greece enacted a new law in 2017 that is a step towards a circular economy and applies the approach of Extended Producer Responsibility, making manufacturers and importers of products responsible for the costs of their collection and recycling.⁷⁷ There are 22 product categories subject to Extended Producer Responsibility in Greece, including packaging material; batteries; electrical and electronic equipment; tires; end-of-life vehicles; oils and lubricant waste; and demolition and construction waste. For these waste streams, specific recycling and recovery targets are set out in legislation.⁷⁸

159. Slovenia is reducing waste through stronger regulations and more comprehensive collection systems.⁷⁹ From 2010 to 2016, the rate of recycled municipal waste increased from

⁷⁵ WHO Regional Office for Europe. 2015. Human biomonitoring: facts and figures.

⁷⁶ Israel Ministry of Environmental Protection. February 27, 2019. Ministry Report Reveals Nearly 100% Reduction in Discharge of Pollutants Into Sea.

⁷⁷ Law on Recycling (4496/2017).

⁷⁸ Greece General Secretariat of the Government. 2018. Voluntary National Review on the Implementation of the 2030 Agenda for Sustainable Development

⁷⁹ Regulation of mandatory municipal public service of municipal waste collection (Official Gazette of RS, Nos. 33/17 and 60/18).

22 percent to 58 percent and the share of municipal waste going to landfill fell from 76 percent to 7 percent.

160. Kuwait treats 100 percent of its medical waste, replacing ten older incinerators with three incinerators using state of the art technology to address this hazardous material.

161. In Senegal, the obligation to guarantee to every citizen the right to a healthy environment, including a non-toxic environment and healthy biodiversity led to the adoption of a law prohibiting the production, import, distribution, or use of low-density plastic bags.⁸⁰

162. The most severe penalties for plastic bag use are found in Kenya, where making, selling or importing plastic bags can result in maximum fines of \$25,000 and/or jail sentences of up to four years.

163. In 2018 Samoa adopted a national law to ban the import, manufacture, export, sale and distribution of plastic shopping bags, packing bags and straws effective 30 January 2019.⁸¹ “Plastic shopping bags” means a bag made or partly of thin plastic film and contains starch (such as biodegradable bags) or full petroleum, or addictive used as shopping bags. “Packing bags” means packing bags used for re-packing and storage of products. Also included in the regulation is a fine for those who fail to comply with the plastic ban, which is set at Samoan Tala \$10,000.

164. France’s General Tax on Polluting Activities, established in 1999, applies to a wide range of pollutants, including benzene, arsenic, selenium, mercury, nitrogen oxides, sulphur oxides, volatile organic compounds, polycyclic aromatic hydrocarbons, particulate matter, and garbage. French tax rates on air pollutants tripled in 2013 in an effort to improve air quality.

165. Taxes on plastic bags have reduced their use in Portugal by 85 percent, in Ireland by 90 percent, and in Denmark to just four bags per person per year, the lowest in the world.

166. Austria, Finland and the Netherlands imposed landfill taxes. These taxes provide an incentive for recycling and composting. The Austrian government enacted a landfill tax in 1989 to provide funds for cleaning up contaminated sites. Between 1993 and 2013, 212 remediation projects received funding from the landfill tax revenue. Landfill operators pay the tax on the basis of the tonnages deposited and rates vary depending on the type of landfill. In 2004, Austria banned waste with a total organic carbon content of greater than five percent from landfills, contributing to an 80 percent reduction in greenhouse gas emissions from landfills from 1990 to 2014. Waste taxes in Finland helped reduce household waste transported to landfills from 66 percent of municipal waste in 1997 to just three percent in 2016. Finland is on track to achieve their target of reducing greenhouse gas emissions from the waste sector 85 percent by 2050. Netherlands bans 61 categories of waste from being sent to landfill because alternatives are available, leading to the amount of municipal waste sent to landfills dropping from 35 percent in 1985 to two percent in 2014.

167. Other States upgrading waste management systems include Belarus, Benin, Bulgaria, and Uzbekistan. In Belarus, waste management facilities gained new trucks and state of the art equipment to aid in improving waste management. Residents received bins to separate plastics, glass, waste, and biodegradable materials, as well as compost bins. The project is expected to increase the rate of recycling and composting from 10 percent to at least 70 percent.

168. Guatemala invented a simple, inexpensive and easy to implement solution to capture solid, surface waste and reduce pollution in the Motagua and Villalobos Rivers. A Bio-bar is a barrier made of recycled plastic bottles encased in mesh that is placed across the width of a river or stream to capture garbage, large plastics, and other surface debris. BioBars are now being used in Honduras, Panama, Argentina, and the Dominican Republic. They capture

⁸⁰ Law n ° 2015-09 of May 4th, 2015.

⁸¹ Waste (Plastic Ban) Management Regulation 2018.

90 percent of the plastic and other surface waste that could have polluted the ocean. Bio-bars enable communities to participate in creating, installing, and maintaining the systems while also creating jobs in the collection, sorting, and recycling of the waste that is recovered from the rivers.

169. When the right to a safe, clean, healthy and sustainable environment is violated by pollution, there is a role for the judicial branch of government if no remedial action is being undertaken, or the rate of progress is inadequate. Court decisions in Argentina and the Philippines illustrate the positive role that courts can play in articulating State responsibilities to protect both the environment and human rights. In the Manila Bay case, the Supreme Court of the Philippines found that pollution was violating citizens' constitutional right to a healthy environment and ordered a number of government departments to undertake clean-up activities in the polluted water body of Manila Bay adjacent to the capital.⁸²

170. In the Mendoza case, the Supreme Court of Argentina found that the air, water, and soil pollution in the Matanza-Riachuelo watershed of the capital Buenos Aires violated the Constitutional right to a healthy environment and ordered three levels of government to work together to close businesses polluting illegally, clean up unauthorized garbage dumps, improve residents' access to safe drinking water and sanitation services, and restore the health of the watershed.⁸³ A decade after the Court's decision, more than 1.5 million people have gained access to safe drinking water and sanitation, hundreds of polluting businesses and illegal garbage dumps have been closed, parks, plazas, and riverside pathways have been built, and thousands of people have been relocated from riverside slums into newly built social housing facilities. The project is ongoing, but the progress is significant in fulfilling people's human rights.

6) **Healthy ecosystems and biodiversity**

171. The addition of the right to a healthy and ecologically balanced environment to Costa Rica's constitution in 1994 sparked the strengthening of laws to protect biodiversity. The 1997 General Environmental Law strengthens protection for forestry reserves, national parks, ecological reserves, national wildlife refuges, wetlands and natural monuments. The Costa Rican Biodiversity Law of 1998 focuses on three objectives: conservation of biodiversity, sustainable use of resources, and the fair and equitable sharing of the benefits arising from the utilization of genetic resources. Costa Rica is one of the most biodiverse countries in the world.

172. Ecuador amended or enacted 75 laws, regulations and policies to include the rights of nature. Bolivia passed two laws about the rights of Mother Earth.⁸⁴ These laws highlight the interdependence of human wellbeing and ecosystem health. Two Mexican states have passed laws recognizing the rights of nature.⁸⁵ New Zealand has passed two laws granting natural systems the rights of a legal person, and vesting ownership of the underlying land in those natural persons.⁸⁶ Both New Zealand laws require the appointment of human guardians to represent nature's interests according to an explicit set of principles. Uganda recently passed a law including recognition of the rights of nature.⁸⁷ Courts in Colombia, India, and Bangladesh have issued rulings recognizing the rights of rivers. These innovations in

⁸² MMDA v. Concerned Citizens of Manila Bay, available at https://lawphil.net/judjuris/juri2008/dec2008/gr_171947_2008.html

⁸³ Beatriz Silvia Mendoza and others v. National Government and Others, 2008, M. 1569, 8 July 2008 (Supreme Court).

⁸⁴ 2010 Law of the Rights of Mother Earth, 2012 Framework Law of Mother Earth and Integral Development to Live Well.

⁸⁵ Ley de Proteccion a la Tierra, Sept. 17, 2013, Gaceta Oficial del Distrito Federal. Political Constitution of the State of Guerrero, 2014.

⁸⁶ Te Urewera Act 2014, New Zealand Public Act No. 51, July 27, 2014. Te Awa Tupua (Whanganui River Claims Settlement) Act 2017, New Zealand Public Act No. 7, March 20, 2017.

⁸⁷ National Environmental Act of 2019

legislation and jurisprudence laws reflect an effort to shift our cultural relationship with the non-human world and transform the way we protect biological diversity.

173. Slovenia has designated 37.5 percent of its land area as Natura 2000 sites, the highest level in the European Union. Including other types of nature conservation areas, Slovenia has protected over 40 percent of its territory. The creation of parks increased health and happiness as well as helping the tourism industry, which, in turn, boosted the country's overall wealth.⁸⁸

174. Pursuant to Cambodia's ambitious Environmental Governance Reform for Sustainable Development program, large areas of forests have been designated as protected areas and biodiversity conservation corridors to be managed by the Ministry of the Environment. As a result, Cambodia's protected areas system now covers 39 percent of the country's surface area. Concerns have been raised about the impacts of these measures upon forest dependent people.

175. In 1778, the Bogd Khan Mountain, just south of Ulaanbaatar, was designated as a strictly protected area, making it the oldest national park in the world. Since 1992, Mongolia has expanded its protected areas system. The national system currently includes 20 strictly protected areas covering eight percent of the country, 32 national parks covering almost eight percent, 36 nature reserves (2.3 percent), and 14 national monuments (another 0.9 per cent). At 19 percent, Mongolia has already reached the Aichi target. Mongolian law also authorizes the designation of locally protected areas, which cover another 12 percent of its territory.

176. Since 2006, São Tomé and Príncipe has designated two new protected areas, the São Tomé Obô Natural Park and the Príncipe Natural Park. Through the creation of these parks, São Tomé and Príncipe has designated 30% of its total land as protected territory.

177. In 2004 the Paraguayan government passed the Zero Deforestation Law, which prohibits the conversion of forests to farmland in Paraguay's Eastern Region. This region is home to Paraguay's portion of the Atlantic Forest, which it shares with Brazil and Argentina. The forest is home to nearly seven percent of the world's animal species, many of which are endemic and threatened with extinction. From 2004 to 2013, there was a 90 percent decrease in deforestation in the country. The law was extended for an additional five years in 2013 and again in 2018. Prior to the law's passage, Paraguay had the one of the highest deforestation rates in the world, driven primarily by land clearing to raise cattle.

178. In 2011, the Philippines enacted a total ban on logging in natural forests, permitting trees to be cut only on plantations. This action was motivated by concerns about climate change, landslides, and a desire to ensure that future generations of Filipinos would be able to enjoy old-growth tropical forests and their rich biological diversity. An impetus for this good practice was a 1993 Supreme Court decision in a ground-breaking lawsuit led on behalf of children and future generations. The case asserted that clear-cutting old-growth forests violated the constitutional right to live in a healthy environment, and the court's powerful judgment led to the cancellation of many logging contracts.⁸⁹

179. States implementing the International Convention for the Regulation of Whaling, which effectively ended commercial whaling, enabled many species of whales to enjoy extraordinary recoveries, including humpback whales and grey whales. Other whale species, such as the North Atlantic right whale, continue to be endangered because of collisions with ships and entanglement with fishing gear.

180. One of the most widely reported good practices involves planting trees, which engages the public and provides a wide range of benefits to people and nature. These efforts range from Timor L'este to Pakistan. Timor L'este has a program called One Child, One Tree which

⁸⁸ Daniel T. Cross, 2018. "A giant of environmentalism: tiny Slovenia," Sustainability Times, 29 Sept. 2018. <https://www.sustainability-times.com/environmental-protection/a-giant-of-environmentalism-tiny-slovenia/>

⁸⁹ Oposa et al. v. Factoran et al. 1993. Supreme Court of the Philippines.

involves the distribution of trees to all the schools around the country. Trees are to be planted within the school compound as well as in each student's household. Pakistan launched the 10 Billion Tree Tsunami initiative in 2018, following a successful program in the state of Khyber Pakhtunkhwa.

181. The Congo Basin Sustainable Landscapes program works in partnership with Cameroon, Central African Republic, the Democratic Republic of Congo, Equatorial Guinea, Gabon, and the Republic of Congo to protect the Congo Basin and its rich biodiversity. The Congo Basin is home to 70 percent of Africa's forests and a vast number of species.⁹⁰ The program seeks to ensure that people who depend on the forest or their livelihoods are fully engaged and empowered in the process of land use planning, including conservation initiatives.⁹¹

182. Jordan, Singapore and Grenada are attempting to restore coral reefs damaged by bleaching, development and pollution. Coral reefs are hotspots of biodiversity, providing essential habitat for a broad range of fish species. Transplanted reefs in Jordan's Gulf of Aqaba, which may be up to 6,000 years old, are showing promising signs of growth as well as resilience to increasing ocean temperatures and acidification. Singapore has also had success in relocating coral colonies, while Grenada is adapting to climate change by transplanting corals in an effort to create natural reefs that limit the erosion of beaches and shorelines.

183. Cote d'Ivoire has developed an action plan to address problems associated with alien invasive species. Herbivorous insects are being used to control 3 alien invasive species, namely, water hyacinth (*Eichhornia crassipes*), water fern (*Salvinia molesta*), and water lettuce (*Pistia stratiotes*). This is environmentally superior to using pesticides, and in an interesting innovation, ground up water hyacinths are being composted for use as fertilizer.

184. Belgium's *maillage vert et bleu* initiative focuses on reconnecting natural areas to preserve biodiversity. Wildlife corridors enable species to move from one green space to another and allow aquatic species to travel freely through connected waterbodies. This initiative has already benefitted the Woluwe river, stabilizing riverbanks and restoring wildlife habitat.

185. The government of Zambia halted plans to build the 235 MW Ndevu Gorge Power Project, on the Luangwa River, one of the longest remaining free-flowing rivers in southern Africa. An immense reservoir would have flooded communities living near the river as well as part of South Luangwa National Park. The Nsenga people and WWF thanked the government for the decision to cancel the project and proposed solar and wind farms as alternatives for generating clean electricity.

186. PES programs, which provide financial compensation for environmental protection, have become well established in countries such as Costa Rica, Ecuador, Mexico, and Vietnam. These programs have been successful in reducing deforestation and promoting reforestation, particularly when used in combination with protected areas, community development efforts, and reorientation of agricultural growth in forest-friendly directions.

187. In 1997, Costa Rica started a program to improve the livelihoods of Indigenous peoples, small-scale farmers, agroforestry producers, and landowners by paying them to conserve, restore, and sustainably use forests. The program focused on low-income and Indigenous communities and has resulted in the conservation and protection of more than 1.2 million hectares of forest and the payment of over \$500 million between 1997 and 2018. Almost 3,000 women landowners have signed contracts to receive funds under this program. Funding comes from Costa Rica's carbon tax, and has grown consistently, enabling contracts for an average of 270,000 hectares per year from 2014 to 2018. Additional benefits include reduced greenhouse gas emissions, carbon storage, protection of water, protection of

⁹⁰ <https://www.thegef.org/news/six-countries-one-forest-one-future>

⁹¹ <https://www.thegef.org/blog/congo-basin-critical-health-our-planet>

biodiversity for conservation and sustainable use, and protection of nature's beauty, which benefits the people and the tourism industry.

188. Based on the success of Costa Rica's first payment for ecosystem services program, a second initiative called the Biodiversity Conservation Program (BCP) was launched in 2015. An endowment fund was created, and the returns from its investments are used for biodiversity conservation on private land. The BCP is based on two main components, a financial incentive granted per hectare and non-financial incentives such as training, sharing experiences, and support on key issues for producers, enabling them to improve their economic returns by implementing best practices. Women make up 27 percent of BCP participants to date. The two programs have helped Costa Rica reverse deforestation and increase forest cover from one-quarter of the country to more than half of all land.

189. Mauritania and Guinea-Bissau have negotiated financial support within the framework of European Union's Fisheries Partnership Agreements (FPAs) to help finance the creation and management of marine protected areas. The agreements resemble international payments for ecosystem services. To protect these funds from shifting political priorities, conservation trust funds have been created in both countries. These trust funds are independent entities financed by a range of international and national sources. Mauritania's trust fund exceeds 20 million Euros while the more recent Guinea-Bissau trust fund is five million Euros.⁹²

190. Ecuador's Socio Bosque Program, started in 2008, offers financial incentives to both individual and collective landowners in the form of annual per-hectare payments in exchange for their help in protecting native forests and other ecosystems. The program conserves biodiversity reduces carbon emissions and alleviates poverty in rural areas. Ecuador has been able to reduce deforestation and protect 1.6 million hectares of native forests as a result of this initiative.

191. Mexico began a similar program in 2003, assisting poor rural communities that expressed commitments to environmental conservation. Funds are invested in various forest management activities including firefighting, controlling pests and diseases, fencing to keep out livestock and patrols to prevent poaching and illegal logging.⁹³

192. Zimbabwe's National Elephant Management Plan (2015-2020) includes anti-poaching units that have reduced poaching in vital habitat including Matusadona National Park.⁹⁴

193. Mexico created an environmental police unit in 2016 to enhance enforcement of environmental laws and regulations. There are 1,600 specially trained police officers who, among other tasks, patrol protected areas. The environmental police's station in a critical protected area for monarch butterflies dramatically improved habitat protection as illegal timber harvesting fell 94 percent. Other conservation success stories related to stronger protected areas policies and the environmental police actions are growing populations of Golden eagles and jaguars and the reintroduction of the Californian condor.

III. Conclusion

194. **In response to the global environmental crisis, it is clear that States, businesses, and individuals must dedicate themselves to rapid, systemic, and transformative**

⁹² <https://www.oecd.org/countries/mauritania/Policy-Paper-Sustainable-financing-for-marine-ecosystem-services-in-Mauritania-Guinea-Bissau.pdf>

⁹³ Boucher et al. 2014. Deforestation Success Stories: Tropical nations where forest protection and reforestation have worked

⁹⁴ P. Bax. 2019. "Africa's Biggest Conservation Success Was Once a Poachers' Paradise," Bloomberg, 6 Jan. 2019, <https://www.bloomberg.com/news/articles/2019-01-07/africa-s-biggest-conservation-success-was-once-a-poachers-paradise>

S. Mhofu. 2017. "Zimbabwe Anti-poaching Unit Scores Success," VOA News, 20 Feb. 2017 <https://www.voanews.com/africa/zimbabwe-anti-poaching-unit-scores-success>

changes in all aspects of society. These changes are essential in order to avoid foreseeable and devastating impacts on human rights in all regions of the world, impacts that are already occurring but will be exacerbated by a failure to address climate change, biodiversity loss and pollution. As noted in the main report on good practices in the implementation of the right to a safe, clean, healthy and sustainable environment (A/HRC/43/54), the abundance and diversity of actions being taken by States are encouraging. The highlighted good practices are not sufficient but do illustrate the very real possibility of more ambitious, effective, and equitable action. Rights-based solutions clearly do exist but must be implemented with unprecedented speed and scale.
