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A safe climate: good practices

Note by the Secretary-General

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/74/161). It is available in English only on the website of the Office of the High Commissioner for Human Rights (<https://www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/Annualreports.aspx>).

* A/74/50

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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Annex

A Safe Climate: Good practices

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 climate change and human rights (A/74/161). However, these good practices are vitally important because they demonstrate the availability of effective actions to simultaneously address climate change and protect human rights. Drawn from every continent and featuring more than 70 States and a wide range of actors, the following examples are intended to inspire others to take ambitious action to address the global climate emergency. In particular, the Special Rapporteur would like to thank the following States for their thoughtful responses to his questionnaire on climate change and human rights: Colombia, Costa Rica, Cuba, Germany, Greece, Honduras, Hungary, Mali, Mexico, Moldova, Monaco, Norway, Peru, Senegal, Slovenia, Sweden, and Uruguay.¹

II. The environmental rule of law

2. Constitutions represent the supreme law of all States and also reflect a society's most cherished values. It is encouraging that nine States now include responsibilities relating to climate change in their national constitutions including Cote d'Ivoire (Preamble), Cuba (Art. 16), Dominican Republic (Art. 194), Ecuador (Art. 414), Thailand (Art. 258), Tunisia (Art. 45), Venezuela (Art. 127), Vietnam (Art. 263), and Zambia (Art. 257). Given the importance of natural forests as carbon sinks, it is worth applauding Bhutan's Constitution, which requires that 60 percent of the land remain forested forever (Art 5(3)).

3. Approximately 140 States have enacted framework climate legislation.² The best laws include bold short and long-term targets, timelines, and accountability mechanisms.³ An excellent example is the United Kingdom's Climate Change Act, which requires a reduction of greenhouse gas emissions by at least 80 percent by 2050 compared to 1990 levels, through legally binding caps on emissions, carbon budgets, and various programs. Elements of the British law have been emulated by other countries including Denmark, France, Mexico, Norway, and Sweden.

4. Mexico's General Law on Climate Change (2012) specifically states that it is intended to guarantee the constitutionally protected right to a healthy environment (Article 2). 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.

5. Long-term plans for achieving deep emissions reductions by 2050 provide essential vision as well as certainty to investors that economies will shift away from fossil fuels over the next three decades. Eleven States have filed long-term de-carbonization plans with the United Nations, as suggested by the Paris Agreement, including Benin, Canada, Czechia, Fiji, France, Germany, Japan, the Marshall Islands, Mexico, Ukraine, the United Kingdom and the United States.

6. A growing number of States have incorporated, in law, specific timelines for achieving net zero carbon emissions, including Norway (2030), Finland (2035), Sweden (2045), France

¹ The contributions by State and non-State actors can be viewed at www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/Annualreports.aspx

² Grantham Research Institute on Climate Change and the Environment. 2018. *Global trends in climate change legislation*.

³ A. Averchenkova. 2019. "Legislating for a low carbon and climate resilient transition: learning from international experiences" *Elcano Policy Paper*.

(2050), and the United Kingdom (2050). Bhutan is already carbon negative, and intends to maintain carbon neutrality. Costa Rica, Denmark, Fiji, Iceland, Ireland, Marshall Islands, New Zealand, Portugal and Uruguay have made similar but not legally binding commitments. Denmark recently raised its ambition by setting a goal of reducing greenhouse gas emissions 70 percent by 2030.

7. Strong laws and policies have enabled dozens of States to substantially reduce their greenhouse gas emissions, led by Czechia, Denmark, Hungary, Slovakia, and the United Kingdom, where emissions are down more than 30 percent between 1990 and 2017.⁴ Other Annex 1 Parties making progress (at least 20 percent decline in GHG emissions since 1990) include Belgium, Croatia, Estonia, Finland, Germany, Luxembourg, Portugal, Romania, and Sweden.⁵ Sweden reduced emissions 26 percent since 1990, while enjoying an increase in GDP of 75 percent over the same time period.⁶

8. 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, and vehicle fee-bates (point of sale fees on polluting vehicles and rebates for cleaner vehicles).⁷

9. There are several excellent examples of domestic legislation related to gender equality and climate change, from Mexico, the Philippines, Morocco and Guatemala. In Mexico, the General Law on Climate Change includes a specific focus on gender equality and empowering women. In the Philippines, the Climate Change Act of 2009 requires “the State to incorporate a gender-sensitive, pro-children and pro-poor perspective in all climate change and renewable energy efforts, plans and programmes.”

10. 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 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 into whether fossil fuel companies responsible for the majority of historical greenhouse gas emissions should be held liable for human rights violations caused by climate change.⁸

11. 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.⁹ 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.

12. 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

4 C. Le Quere et al. 2019. “Drivers of declining CO2 emissions in 18 developed economies,” *Nature Climate Change*, 9: 213-17.

5 See https://di.unfccc.int/time_series

6 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.

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

8 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*.

9 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.

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 2020.¹⁰

13. 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.”¹¹

14. 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.¹²

15. 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 free and ordered society.”¹³ The case is ongoing. Children and youth have filed similar lawsuits in all fifty US states.

16. In Colombia in 2018, the Supreme Court ruled in favor 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.¹⁴

17. 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.¹⁵

18. 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.”

¹⁰ *Urgenda Foundation v. Kingdom of the Netherlands*, C/09/456689 / HA ZA 13-1396, Decision of 24 June 2015.

¹¹ *Netherlands v Urgenda Foundation*, 2018 Hague Court of Appeal, Civil Law Division 09-10-2018, Case 200.178.245/01.

¹² *Leghari v. Federation of Pakistan*, W.P. No. 25501/2015, Lahore High Court, 4 September 2015.

¹³ *Juliana v. United States*, (2016), Case No. 6:15-cv-01517-TC, US District Court, District of Oregon, 10 Nov., 2016, p. 32.

¹⁴ *Demanda Generaciones Futuras v. Minambiente*, Supreme Court of Colombia, Decision of 5 April 2018.

¹⁵ For further details of all climate lawsuits see Columbia University’s climatecasechart.com

III. Mitigation

19. More than forty countries, from Canada to India, price carbon emissions, either through a tax or an emissions trading system.¹⁶ 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. Fiji's Environment and Climate Levy is not a carbon tax per se but does target emissions-intensive activities and products, and all revenues generated are to be dedicated to climate action.

20. 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 kilometers of high-speed train networks, electric vehicles, electric vehicle charging stations, and electric bicycles. 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.

21. Some cities have made great strides in simultaneously addressing climate change and air pollution. Oslo (Norway) is a pioneer in the push towards zero emission mobility, with benefits in terms of air quality and reduced greenhouse gas emissions. Rajshahi (Bangladesh) bought a fleet of battery powered rickshaws for public transit, built sidewalks and the country's first bike lane, planted tens of thousands of trees, cleaned up the polluting brick kiln industry and banned large trucks from the city centre. Air pollution and greenhouse gas emissions rapidly declined.¹⁷

22. 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.

23. 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.

24. In 2019, the We Mean Business Coalition, composed of over 900 companies worth \$20 trillion, called on the G20 to reduce GHG emissions 50 percent by 2030 and achieve net zero by 2050. Also in 2019, a group of investors holding half the world's invested capital called on the G20 to take urgent action, set a global price on carbon by the end of 2020, strengthen national emission reduction targets for 2030, phase out coal power, and eliminate fossil fuel subsidies.

A. Phasing out fossil fuels

25. France has taken a bold stance against further fossil fuel development, enacting a law in 2017 that bans new fossil fuel exploration and development and requires existing projects to be closed by 2040 (including French territories overseas).

26. 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

¹⁶ World Bank Partnership for Market Readiness. 2017. *Carbon Tax Guide: A Handbook for Policy Makers*.

¹⁷ World Health Organization. 2019. Global ambient air quality database (over 4,300 cities).

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.¹⁸

27. Costa Rica and Belize were the first States to prohibit all offshore oil and gas exploration and development, demonstrating climate leadership and protecting marine ecosystems from fossil fuel contamination.

28. A growing number of States have eliminated the use of coal to generate electricity, are phasing out coal, or are committed to never using coal for electricity generation. Canada and the United Kingdom created the Powering Past Coal Alliance in 2017 and have been joined by 28 States and 22 sub-national governments pledging to end coal use by 2030.¹⁹ Other States, such as Slovenia, are making progress in replaced coal-fired electricity generation with cleaner alternatives.

29. 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.”²⁰

30. 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 Czechia, France, Uruguay, Germany, Scotland, Ireland, Bulgaria, Romania, Wales, and Tunisia. 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.

31. 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.

B. Clean and green electricity

32. Dramatic declines in the cost of renewable energy are accelerating the transition to clean energy. In many countries, wind and solar are now cheaper than fossil fuel electricity. Global solar electricity generating capacity has grown exponentially from one gigawatt in 2000 (one gigawatt equals one billion watts) to over 500 gigawatts at the end of 2018. Thanks to supportive public policies, the top five solar electricity producing countries in the world are China, the US, Japan, Germany and India.

33. The situation with wind power is similar, as the global total of wind electricity generating capacity has grown from 17 gigawatts in 2000 to over 600 gigawatts at the end of 2018. Thanks to supportive public policies, the top five countries in the world are China, the US, Germany, India, and Spain.

34. Distributed renewable energy programs (where electricity is produced at or near the point where it is used) offer an excellent way to extend reliable access to clean and affordable electricity and have been established in many low- and middle-income countries in Asia, Africa, and Latin America. For example, at least twenty million people in remote villages in

¹⁸ 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.

¹⁹ Powering Past Coal Alliance. <https://poweringpastcoal.org>

²⁰ *Gloucester Resources Limited v Minister for Planning* [2019] NSWLEC 7, Preston CJ, para. 699.

Bangladesh have solar panels with batteries that store electricity, improving their quality of life.²¹

35. The steep decline in the costs of wind and solar mean that rapidly shifting to 100 percent renewable electricity is environmentally responsible and economically attractive. The following States already secure 98-100 percent of their electricity from renewables including hydroelectric, solar, wind, geothermal, and biomass: Costa Rica, Iceland, Norway, Paraguay, Tajikistan, and Uruguay. Uruguay achieved this remarkable accomplishment through extensive public and private investment in renewable energy, amounting to more than \$US 7 billion between 2010 and 2016.²² Ten other States are above 90 percent. Many sub-national governments, municipalities, and businesses have switched to 100 percent renewable electricity.

36. 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 hydroelectric 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.

37. Indigenous communities are enthusiastically embracing renewable energy. Kiashe Zaaging Anishinaabek/Gull Bay First Nation, an Indigenous community in Ontario, built Canada's first fully-integrated micro-grid, using solar panels and battery storage to replace diesel fuel for producing electricity. More than 1,000 ground-mounted solar panels will provide energy to a population of up to 800 people. According to Chief Wilfred N. King, "The KZA Solar Microgrid project reflects our peoples' connection with the land and our responsibility as caretakers on behalf of all living things for seven generations... we shall replace thousands of litres of dirty diesel fuel with clean solar power."

C. Towards zero emission transport

38. 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.

39. 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. As a result, Norway has achieved a remarkably high proportion of electric vehicle sales—roughly 50 percent in the first half of 2019—through a variety of incentives and disincentives.

40. 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

21 Kabir, Ehsanul; Kim, Ki-Hyun; Szulejko, Jan E. 2017. "Social Impacts of Solar Home Systems in Rural Areas: A Case Study in Bangladesh." *Energies* 10, no. 10: 1615.

22 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.

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.

41. 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 2040.²³ 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.

D. Energy efficient buildings

42. 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).

43. 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.

44. 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.²⁴

45. 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.

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

E. Healthy and sustainable forests

47. 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 2017.²⁵ Ethiopia, Mali, Niger, Senegal, and other African States have been planting millions of trees

²³ Center for Climate Protection, 2019. Actions by countries to phase out internal combustion engines.

²⁴ 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.

²⁵ 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.

to combat climate change and desertification while simultaneously providing agricultural and economic opportunities. Ethiopia set a record by planting over 300 million trees in one day in 2019, while Senegal has planted more than 11 million acacia trees as part of Africa's Great Green Wall initiative.

48. 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.

49. Uruguay's Forest Law (Law No. 15,939) includes provisions that minimize deforestation that would cause greenhouse gas emissions. 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).

50. 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.²⁶

F. Healthy and sustainable food

51. 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.²⁷ 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.

IV. Accelerating adaptation

52. In 2018, Vanuatu created a National Policy on Climate Change and Disaster-Induced Displacement, emphasizing a rights-based approach that draws on the Sendai Framework for Disaster Risk Reduction and the Guiding Principles on Internal Displacement. The policy is systemic and action-oriented, incorporating non-discrimination, gender responsiveness and community participation. It addresses prevention, protects persons during evacuation and throughout the term of displacement, and seeks durable solutions.

53. 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.

54. 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.

55. 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

²⁶ World Resources Institute and Rights and Resources Institute. 2014. *Securing Rights, Combating Climate Change: How Strengthening Community Forest Rights Mitigates Climate Change*.

²⁷ UN Environment. 2019. *Global Environment Outlook 6: Healthy Planet, Healthy People*.

positive impacts, including productivity gains and reduced food shortages, in Ethiopia, Malawi, Senegal and Zambia.

56. 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.

57. 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.

58. Although relocating communities should be a last resort, in cases where it is inevitable then plans should be developed in close cooperation with the affected communities. Fiji's Planned Relocation Guidelines, published in 2018, are a commendable example of a rights-based approach to relocation.

V. Increasing climate finance

59. 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.

60. The Netherlands, Canada, Denmark, Australia, Sweden and Switzerland provide 98-100 percent of bilateral public climate finance in the form of grants, which are much better for developing nations than loans.²⁸

61. Flows of climate finance should be designed to benefit women and other potentially vulnerable populations.²⁹ UN-Women promotes gender-responsive climate action through 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.

62. 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). The German Agency for International Cooperation funds projects in Mexico to foster women's participation in climate action, including the Women's Network for Renewable Energy and Energy Efficiency. Ireland promotes gender equality in access to renewable energy, developing climate-resilient agriculture, and greening the health sector.

63. The Global Environment Facility established an Indigenous Peoples Advisory Group and created an Indigenous Peoples Fellowship Program. These are important first steps towards increasing flows of climate finance to Indigenous peoples.

²⁸ Oxfam. 2018. Climate Finance Shadow Report 2018: *Assessing progress towards the \$100 billion commitment*.

²⁹ Green Climate Fund and UN-Women. 2017. *Mainstreaming Gender in Green Climate Fund Projects*.

VI. Systemic and transformative changes

64. The Intergovernmental Panel on Climate Change concluded that rapid, systemic and transformative changes are needed to address the global climate crisis and achieve the Sustainable Development Goals by 2030. Changes are required across almost every sector of society, implicating not only human rights law and climate change law, but also laws and policies governing environmental protection, energy, natural resources, agriculture, trade, investment, corporations, taxes, banking, construction, transport, and land-use. The Special Rapporteur endorses the following potentially transformative ideas, each of which has precedents that confirm their viability.

65. Children and youth around the world are expressing grave concern about the impacts of climate change upon their future. The minimum voting age should be lowered to 16 years to enable youth to participate in and influence the political system, which is to integral to shaping the world they will inherit. The voting age has already been lowered to 16 in a number of nations including Argentina, Austria, Ecuador, Estonia, and Scotland.

66. Demilitarization offers extraordinary potential for reducing conflict, promoting peace, and freeing up vast resources for other societal priorities. Costa Rica is the world's leading example, having disbanded its military in 1948. Costa Rica invested the savings in education and health care with compelling results, as the country enjoys high literacy rates, long life expectancy, a modern economy, an excellent environmental record, and a very happy population

67. In addition to shifting from fossil fuels to renewable energy, the world needs to shift away from today's linear economy, based on extracting resources from nature, manufacturing products, and then throwing away garbage, generating waste and pollution at each stage. The sustainable alternative is a circular economy, where everything we make or use is either reusable, recyclable or safely compostable. Inspired by the genius of natural ecosystems, a circular economy uses smart design to eliminate waste and pollution. Thousands of products, from office chairs to solar panels, have been redesigned to meet circular economy criteria. Businesses have an important role to play, but government policy is the key to accelerating the shift. Circular economy laws have been enacted by the European Union, China, Japan, and Ontario (Canada). An important example is a new EU policy banning many single-use plastics, creating recyclability and recycled content requirements for other plastic products, and making producers responsible for funding and operating recycling and clean-up programs.

68. The relentless pursuit of economic growth (measured by increases in gross domestic product or GDP) has lifted billions of people out of poverty but is inflicting irreparable harm upon the planet whose health is vital to the future for humans and all other species. It is time to for society to rethink its objectives. Several States with large Indigenous populations (e.g. Bolivia, Ecuador) embrace the goal of "sumak kawsay," "buen vivir" or a good life lived in harmony with nature. Bhutan strives to maximize gross national happiness.

69. Modern corporations, with their legal imperative to maximize shareholder value, are major contributors to climate change. Too often, shareholders' interests are prioritized over the public interest, human rights, and the environment. In recent years, a superior alternative has emerged, called a benefit corporation or community interest corporation. Benefit corporations are for-profit enterprises that must make "a material positive impact on society."³⁰ These enterprises must achieve higher standards of transparency, accountability, and performance. Regulations governing benefit corporations expand the duties of directors to require consideration of non-financial stakeholders and mandate reporting on social and environmental performance using credible and independent third-party standards.³¹

³⁰ An excellent overview of benefit corporations is available at <http://www.bcorporation.net/>.

³¹ W.H. Clark and L. Vranka, "White Paper: The Need and Rationale for the Benefit Corporation: Why It Is the Legal Form That Best Addresses the Needs of Social Entrepreneurs, Investors, and, Ultimately, the Public" (2013).

VII. Conclusion

70. In response to the global climate emergency, it is clear that States, businesses, and individuals must dedicate themselves to rapid, systemic, and transformative 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 magnified by every increase in global average temperatures. The good practices highlighted in this Annex are not sufficient, but do illustrate the very real possibility of more ambitious, effective, and equitable climate action. Solutions clearly do exist, but must be implemented with unprecedented speed and scale.
