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**Promotion and protection of all human rights, civil,
political, economic, social and cultural rights,
including the right to development****Human rights and the global water crisis: water pollution,
water scarcity and water-related disasters****Report of the Special Rapporteur on the issue of human rights
obligations relating to the enjoyment of a safe, clean, healthy and
sustainable environment****Summary*

In the present report, the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd, describes safe and sufficient water as one of the substantive components of the right to a safe, clean, healthy and sustainable environment. He describes the causes and consequences of the global water crisis, focusing on the negative impacts of water pollution, water scarcity and water-related disasters on the enjoyment of many human rights, with disproportionate effects upon vulnerable and marginalized groups. He highlights procedural and substantive State obligations related to ensuring safe and sufficient water. He identifies good practices that have helped to reduce or prevent water pollution, alleviate water scarcity, reduce risks associated with water-related disasters and protect or restore aquatic ecosystems. The Special Rapporteur provides a seven-step process for States to employ a rights-based approach to water governance, as well as recommendations for actions. Finally, he urges businesses, in order to fulfil their rights-related responsibilities, to contribute to and support efforts to ensure safe and sufficient water for all.

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I. Water is essential for life and well-being

1. Water is the lifeblood of human beings, and life on Earth. Humans are 70 per cent water, and our brains 85 per cent. Many people, particularly indigenous peoples, consider water to be sacred.
2. Although water covers most of the planet's surface, the amount of fresh water is surprisingly limited. Accessible fresh water represents less than 1 per cent of the Earth's water (97 per cent is salt water and 2 per cent is locked up in glaciers and polar ice caps). Groundwater, unseen and underappreciated, constitutes 98 per cent of the planet's unfrozen fresh water.
3. Aquatic ecosystems – wetlands, rivers, lakes, springs and aquifers – help to sustain the global hydrological, carbon and nutrient cycles. These ecosystems are among the world's most biologically diverse environments and contribute to sustaining life by purifying polluted water, buffering flood flows, shielding coastlines, controlling erosion, storing carbon and replenishing groundwater.
4. People depend on fresh water for drinking, cooking, cleaning, sanitation, growing food, fishing, generating energy, navigation, recreation and tourism. Safe, sufficient water and healthy aquatic ecosystems are essential for protecting health, achieving food security and ending poverty. Balancing human needs for water with the health of aquatic ecosystems is one of the key challenges of the twenty-first century.
5. The Special Rapporteur on the human rights to safe drinking water and sanitation has done outstanding work in defining the scope and content of these rights, as well as related State obligations, good practices, and ongoing challenges.¹ The present report takes a broader approach, focusing on the human rights implications and obligations related to water pollution, water scarcity, water-related disasters, and damage to healthy freshwater ecosystems.
6. To prepare the present report, the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, David R. Boyd, circulated a call for inputs in September 2020. The Special Rapporteur is grateful for the submissions received from Armenia, Brunei Darussalam, Chile, Colombia, Costa Rica, Côte d'Ivoire, Cuba, Cyprus, Ecuador, Egypt, El Salvador, Haiti, the Islamic Republic of Iran, Italy, Mauritius, Mexico, Monaco, Qatar, Romania, the Russian Federation, Saudi Arabia, Singapore, Switzerland and the United Kingdom of Great Britain and Northern Ireland, and from the European Union, as well as for the more than 60 insightful submissions from indigenous peoples, national human rights institutions, United Nations agencies, civil society, business associations, academics and individuals, including youth.² The Special Rapporteur organized a series of online consultations in September, engaging people throughout the world. He also hosted meetings with UN-Water³ and with Sanitation and Water for All.⁴
7. The present report, on safe, sufficient water and healthy freshwater ecosystems, is the fourth in a series of thematic reports clarifying the substantive elements of the right to a safe, clean, healthy and sustainable environment, following the reports on clean air (A/HRC/40/55), a safe climate (A/74/161) and healthy ecosystems and biodiversity (A/75/161). Future reports will address healthy and sustainably produced food, and non-toxic environments in which people can live, work and play.

¹ See www.ohchr.org/EN/Issues/WaterAndSanitation/SRWater/Pages/SRWaterIndex.aspx.

² The submissions are available at www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/EnvironmentWater.aspx.

³ See www.unwater.org.

⁴ See www.sanitationandwaterforall.org/about/about-us.

II. The global water crisis

8. Instead of treating water – this unique, life-supporting and indispensable substance – with care, respect and reverence, humans are polluting surface water and groundwater, using too much water, destroying wetlands and inflicting catastrophic damage on freshwater ecosystems, thus undermining water’s extraordinary contributions to human health, well-being and prosperity. A Brazilian indigenous organization has observed that “words are lacking to describe the scale of destruction”.⁵ In 2020, for the eighth consecutive year, the World Economic Forum listed water crises among the top five risks to the global economy.⁶

9. The Special Rapporteur heard devastating stories from all over the world from people forced to drink dangerously polluted or salty water, deprived of water by extractive industries, no longer able to grow their own food or harvest fish, their cultures imperilled by ill-conceived projects ranging from dams and mines to monoculture plantations and fracking, and compelled to migrate by floods, droughts or other water-related disasters. He received numerous accounts of environmental human rights defenders suffering violence, intimidation or criminalization for their courageous efforts to protect water.

10. Despite progress in improving access to clean water and improved sanitation, billions of people remain unserved or underserved. Over 2 billion people lack access to safely managed drinking water (accessible on premises, available when needed and free from contamination). Worse yet, 785 million people lack even basic water services (access to an improved source, e.g. piped water, a borehole, a dug well or a protected spring).⁷

11. Over 4 billion people – half the global population – lack access to safely managed sanitation, meaning their excreta is untreated, threatening human and ecosystem health.⁸ Of those people, 673 million have no access to toilets, forcing them to practise open defecation. An estimated 367 million children attend schools without toilets. Only one in four people in least developed countries enjoy access to soap and water in their homes for handwashing purposes.⁹ The consequences for health and human rights during the coronavirus disease (COVID-19) pandemic have been catastrophic.

12. Waterborne disease causes nearly 2 million preventable deaths worldwide annually, with the greatest burden falling on children under 5 years of age.¹⁰ Water-related diseases are closely linked to poverty, and disproportionately affect vulnerable groups.

13. Water pollution is worsening in many parts of the world, adversely affecting the quality and quantity of water available to meet human needs and sustain ecosystems.¹¹ Roughly 80 per cent of wastewater is discharged into the environment untreated, contaminating surface water, groundwater, soil, and the oceans.¹² Wastewater includes effluent from industry, agriculture, households and institutions, as well as urban run-off. The health and environmental costs of water pollution from agriculture alone are hundreds of billions of dollars annually.¹³ Even in States with advanced wastewater treatment facilities, challenges remain, including pharmaceuticals, personal care products and microplastics.¹⁴

⁵ Submission from Instituto Shirley Djukurnã Krenak.

⁶ World Economic Forum, *The Global Risks Report 2020*.

⁷ United Nations Children’s Fund (UNICEF) and World Health Organization (WHO), *Progress on Household Drinking Water, Sanitation and Hygiene 2000–2017: Special Focus on Inequalities* (2019).

⁸ United Nations Children’s Fund (UNICEF) and WHO, *State of the World’s Sanitation: An Urgent Call to Transform Sanitation for Better Health, Environments, Economies and Societies* (2020).

⁹ UN-Water, *Sustainable Development Goal 6: Synthesis Report on Water and Sanitation – 2018*.

¹⁰ WHO, *Safer Water, Better Health* (2019 update).

¹¹ United Nations Environment Programme, *A Snapshot of the World’s Water Quality: Towards a Global Assessment* (2016).

¹² World Bank Group, *Quality Unknown: The Invisible Water Crisis* (2019).

¹³ Javier Mateo-Sagasta, Sara Marjani Zadeh and Hugh Turrall (eds.), *More People, More Food, Worse Water? A Global Review of Water Pollution from Agriculture* (2018).

¹⁴ UNICEF and WHO, *State of the World’s Sanitation: An Urgent Call to Transform Sanitation for Better Health, Environments, Economies and Societies*.

14. Water scarcity is the shortage of fresh water available to meet people's basic needs, fulfil their rights to water and sanitation and maintain healthy ecosystems. It can be caused by physically limited supplies, overuse by people and businesses, deteriorating water quality, poor planning, climate change, and mismanagement. Water shortages now affect more than 3 billion people, while 1.5 billion people are suffering severe water scarcity or even drought.¹⁵ As many as 700 million people are at risk of being displaced by intense water scarcity by 2030.

15. Global water use is six times higher than it was 100 years ago and continues to increase by 1 per cent per year, twice as fast as the human population grows. More than half of the world's accessible freshwater flows are appropriated for human use. Agriculture accounts for roughly 70 per cent of freshwater use globally, industry 19 per cent and households 12 per cent.¹⁶

16. The diversity and abundance of life in freshwater ecosystems have suffered precipitous declines. Populations of mammals, amphibians, fish, birds and reptiles that depend on a freshwater habitat have crashed by an average of 84 per cent since 1970.¹⁷ One in three freshwater species is at risk of extinction. Over the past century, 85 per cent of the world's wetlands have been destroyed.¹⁸ Human pressures on aquatic ecosystems include water extraction, pollution, habitat destruction, flow modifications, fragmentation from dams and other infrastructure, over-exploitation of species and the introduction of invasive species.

17. Three quarters of all the natural disasters in the last twenty years were water-related, including floods, extreme weather events, landslides and droughts. Between 2001 and 2018, floods and droughts caused 166,000 deaths, affected 3 billion people and cost \$700 billion.¹⁹ Human-caused disasters, such as tailings dam collapses, add to this terrible toll.

18. Inequality is a striking element of the global water crisis. While some people and communities struggle to survive on a few litres per day, businesses and people in wealthy States consume vast quantities of water. For example, the per capita water footprint in Switzerland is 4,200 litres per day, including water used to grow or make products imported from other States. A remarkable 82 per cent of the Swiss water footprint occurs outside Switzerland, including foods produced in water-scarce regions.²⁰

19. Climate change is exacerbating the risks, consequences and inequities associated with water pollution, water scarcity and water-related disasters.²¹ Increasing global temperatures inevitably impact the hydrological cycle. Extreme precipitation events are more intense and frequent, increasing flood risks. Heatwaves are occurring more often and lasting longer, exacerbating water scarcity. Sea level rise can cause saltwater intrusion, making groundwater in coastal aquifers unfit for domestic or agricultural use. Sanitation systems are vulnerable to flooding from storms and sea level rise or have less water for flushing and conveying sewage. Small island developing States are particularly vulnerable to climate change and water-related disasters, and many are experiencing increased water stress. Climate change is used to justify renewed interest in hydropower projects, despite their potentially adverse effects on human rights and ecosystem health.

20. Concerns have been raised about water wars – conflicts ignited by scarcity, allocation and pollution issues. To date, most disputes about water have been resolved peacefully. However, increasing human demands, decreasing availability, and the intensifying impacts of climate change increase the risk of violent conflict. All 15 of the world's most war-torn countries are facing moderate to severe drought.

¹⁵ Food and Agriculture Organization of the United Nations (FAO), *The State of Food and Agriculture 2020: Overcoming Water Challenges in Agriculture*.

¹⁶ UN-Water, *Sustainable Development Goal 6: Synthesis Report on Water and Sanitation – 2018*.

¹⁷ World Wildlife Fund, *Living Planet Report 2020: Bending the Curve of Biodiversity Loss*.

¹⁸ IPBES/7/10/Add.1: see <https://ipbes.net/events/ipbes-7-plenary>.

¹⁹ UNESCO and UN-Water, *United Nations World Water Development Report 2020: Water and Climate Change*.

²⁰ Submission by Switzerland.

²¹ UNESCO and UN-Water, *United Nations World Water Development Report 2020: Water and Climate Change*.

21. To summarize, the world faces a water crisis and it is getting worse. Human use of water, water pollution and the degradation of aquatic ecosystems continue to accelerate because of population growth, economic growth, the climate emergency, land-use change, extractivism, inefficient use of water, and weak planning, regulation and enforcement.

22. The Sustainable Development Goals represent society's ambitious effort to tackle the interconnected water, climate and biodiversity crises in a holistic, urgent and systemic way. The Goals envisage "a world of universal respect for human rights and human dignity".²² However, the global water crisis undermines efforts to achieve the Goals, exacerbating poverty (see Goal 1), threatening food security (see Goal 2), jeopardizing human health (see Goal 3), worsening the decline of biodiversity (see Goals 13 and 14) and sabotaging the global economy. Safe and sufficient water is also connected to specific targets: including reducing waterborne diseases (see target 3.3), preventing water-related disasters (see target 11.5), and climate change adaptation (see target 13.2). As the High-level Panel on Water observed, "Water is the common currency which links nearly every Sustainable Development Goal, and it will be a critical determinant of success."²³

23. The present report focuses on human rights and Sustainable Development Goal 6, which goes well beyond universal provision of safe drinking water, sanitation and hygiene. The targets for Goal 6 also address: improved water quality through reducing pollution, increased water-use efficiency and decreased scarcity, integrated water resources management, protecting and restoring water-related ecosystems, international cooperation and capacity-building, and public participation in water management.

24. A serious lack of financial, institutional and human capacity is constraining progress on Sustainable Development Goal 6. Over 80 per cent of States have insufficient financial resources to meet national water, sanitation and hygiene targets.²⁴ Laws, regulations, standards and policies, as well as their implementation and enforcement, are inadequate in many countries, including those where pressures on water are greatest.

III. Impacts of the global water crisis on human rights

25. Water pollution, water scarcity and water-related disasters have major impacts on a wide range of human rights, including the rights to life, health, water, sanitation, food, a healthy environment, education, an adequate standard of living, development and culture, and on the rights of the child. The Committee on Economic, Social and Cultural Rights has observed that "water is indispensable for leading a life in human dignity".²⁵

A. Right to life

26. Although water is essential to life, contaminated water and water scarcity can cause death. Nearly 2 million deaths could be prevented annually with safe and sufficient water.²⁶ This includes hundreds of thousands of preventable deaths of children aged 5 and under, mostly in low-income countries.

B. Right to health

27. Contaminated water and poor sanitation are linked to cholera, diarrhoea, dysentery, soil-transmitted helminth infections, hepatitis A and typhoid. In 2017, over 220 million people required treatment for schistosomiasis – a disease caused by parasitic worms, contracted through exposure to infested water.²⁷ Unsafe use of wastewater and sludge in

²² General Assembly resolution 70/1.

²³ High-level Panel on Water, "Making every drop count", 14 March 2018, p. 15.

²⁴ WHO and UN-Water, *National Systems To Support Drinking-Water, Sanitation And Hygiene: Global Status Report 2019*.

²⁵ General comment No. 15 (2002) on the right to water.

²⁶ WHO, *Safer Water, Better Health* (2019 update).

²⁷ See www.who.int/health-topics/schistosomiasis#tab=tab_1.

agriculture causes foodborne illnesses. Waterborne illness caused by recreational activities afflicts hundreds of millions of people annually.

28. The Committee on Economic, Social and Cultural Rights has expressed concerns about waterborne diseases caused by pollution from industry, agriculture and sewage.²⁸ The Committee also criticized the effects of hydraulic fracturing for oil and gas (i.e. fracking) on water quality.²⁹ Polluted water is a significant source of exposure to endocrine-disrupting chemicals, which harm reproductive health.³⁰

29. Lack of water security harms mental health, through psychological effects such as fear, victimization, low self-esteem, anxiety, shame, anger and depression. Girls whose mothers experience psychological symptoms such as depression related to water insecurity miss school more often.³¹ Individuals who experience droughts and floods endure psychological distress, characterized by post-traumatic stress disorder symptoms, depression, and anxiety.

30. Another major health concern is antimicrobial resistance, which occurs when medicines no longer work effectively against targeted microbes (e.g. bacteria and viruses). Hundreds of millions of doses of antimicrobials are used annually for infections that could be prevented with better sanitation. Wastewater containing resistant bacteria spreads antimicrobial resistance. To safeguard both human and ecosystem health, antimicrobials must be used more sparingly.³²

C. Rights to water and sanitation

31. Fulfilling the right to water requires ensuring safe and sufficient water for personal and domestic use.³³ Pollution and pathogens can prevent water from being safe for human consumption. In 2019, the World Health Organization (WHO) warned that 2 billion people drank water contaminated by faeces on a daily basis.³⁴ Scarcity and water-related disasters such as floods can increase costs and impede access to adequate sanitation facilities. The lack of access to safe and sufficient water for household use is usually caused by poverty, inequality, and the failure of governments to prioritize water allocation for basic needs and human dignity, not by scarcity per se.

D. Right to food

32. Safe and sufficient water is vital for realizing the right to food, particularly for poor and marginalized people engaged in subsistence or small-scale farming and fishing. As salinity in water and soil increases due to more intense droughts, storm surges and rising volumes of water extraction, agricultural yields fall, causing the world to lose enough food each year to feed 170 million people. Nearly 220,000 hectares of farmland in low-lying coastal areas of India and Bangladesh have been rendered unproductive due to salinity ingress in recent years.³⁵

33. The increasing frequency and severity of droughts, attributed to climate change, present a major threat to the right to food. Water shortages related to reduced rainfall are particularly problematic for small-scale farmers who do not have access to water for

²⁸ See E/C.12/UZB/CO/2.

²⁹ See E/C.12/ARG/CO/4.

³⁰ A. Gonsioroski, V.E. Mourikes and J.A. Flaws, "Endocrine disruptors in water and their effects on the reproductive system", *International Journal of Molecular Sciences*, vol. 21, No. 6 (2020), p. 1929.

³¹ C. E. Cooper-Vince et al., "Household water insecurity, missed schooling, and the mediating role of caregiver depression in rural Uganda", *Global Mental Health*, vol. 4 (August 2017).

³² UNICEF and WHO, *State of the World's Sanitation: An Urgent Call to Transform Sanitation for Better Health, Environments, Economies and Societies*.

³³ See General Assembly resolution 64/292 and A/HRC/24/44.

³⁴ WHO, *Drinking water factsheet* (2019).

³⁵ United Nations Office for South-South Cooperation, "Water farming for climate-resilient agriculture and disaster preparedness in India and Bangladesh", *Good Practices in South-South and Triangular Cooperation for Sustainable Development* (September 2020), vol. 3.

irrigation. About 11 per cent of cropland and 14 per cent of pastureland experience recurring droughts, while more than 60 per cent of irrigated cropland is highly water-stressed. The Food and Agriculture Organization of the United Nations concludes that “water shortages and scarcity in agriculture must be addressed immediately and boldly if our pledge to commit to achieve the Sustainable Development Goals is to be taken seriously”.³⁶

34. Flooding is a natural disaster, exacerbated by human activities, that can jeopardize the right to food. For example, floods can destroy crops, wash away topsoil, and submerge large areas of cultivable land. This threatens the livelihoods and food security of farmers and their families, who may face poverty, unemployment and migration.

E. Right to a safe, clean, healthy and sustainable environment

35. The right to a safe, clean, healthy and sustainable environment is legally protected by more than 80 per cent of States through constitutions, legislation, court decisions and regional treaties.³⁷ Safe, sufficient water and healthy aquatic ecosystems are substantive elements of the right to a healthy environment, as recognized by regional tribunals, national laws and national jurisprudence. For example, constitutional recognition of the right to a healthy environment in Costa Rica was a catalyst for the development of stronger laws, regulations and policies to tackle water pollution, such as a law prohibiting open-pit mining, as well as court decisions requiring public and private actors to take actions to prevent violations of this right.³⁸

36. The Inter-American Court of Human Rights has emphasized that “the right to a healthy environment, unlike other rights, protects the components of the environment, such as forests, rivers and seas”.³⁹ In 2020, the Inter-American Court ruled that indigenous peoples’ rights to a healthy environment and to water had been violated by illegal logging and cattle-raising, and ordered Argentina to prepare, within a maximum period of one year, a study establishing actions to be implemented for the conservation of water and to prevent and remedy its contamination.⁴⁰ The African Commission on Human and Peoples’ Rights, in a case involving water contamination by the oil industry, stated that the right to a healthy environment “requires the State to take reasonable and other measures to prevent pollution and ecological degradation”.⁴¹ The European Court of Human Rights has ruled that water pollution can violate several human rights, including the right “to the enjoyment of a healthy and protected environment”.⁴²

37. Many national courts have determined that the failure of States to take adequate action to prevent water pollution, ensure clean water and protect aquatic ecosystems can violate the right to a healthy environment. Two leading examples are decisions from the Supreme Court of Argentina and the Supreme Court of the Philippines. In both cases, initiated by concerned citizens, the courts employed independent scientific experts to inform their judgments, imposed extensive duties upon multiple government agencies, and established innovative measures to ensure compliance with their orders.

38. In response to a lawsuit asserting that chronic water pollution in Manila Bay violated the right to a healthy environment, the Supreme Court of the Philippines ordered 13 responsible agencies to implement the following actions: install and operate sewage treatment facilities, clean up hazardous and toxic wastes, prevent pollution and wastes from ships, develop adequate facilities and programmes for the proper disposal of solid waste, revitalize marine life by reintroducing indigenous species, require septic tank and sludge companies to use adequate treatment facilities, prevent illegal fishing, establish comprehensive environmental education programmes, and allocate a budget sufficient to

³⁶ FAO, *The State of Food and Agriculture 2020: Overcoming Water Challenges in Agriculture*, p. vi.

³⁷ A/HRC/43/53, annex II.

³⁸ Submission by Costa Rica.

³⁹ Inter-American Court of Human Rights, *Advisory Opinion OC-23/17*, 15 November 2017, para. 62.

⁴⁰ Inter-American Court of Human Rights, *Indigenous Communities of the Lhaka Honhat Association v. Argentina*, judgment of 6 February 2020.

⁴¹ *Social and Economic Rights Action Centre v. Nigeria*, communication No. 155/96 (2001), para. 52.

⁴² *Tătar v. Romania* (application No. 67021/01), 27 January 2009.

carry out the restoration plan. In its conclusion, the Court stated that State agencies “cannot escape their obligation to future generations of Filipinos to keep the waters of Manila Bay as clean and clear as humanly possible. Anything less would be a betrayal of the trust reposed in them.”⁴³

39. In a similar case involving the highly contaminated Matanza-Riachuelo watershed in Buenos Aires, the Supreme Court of Argentina found that the right to a healthy environment was violated by water pollution, and issued a comprehensive ruling which identified three objectives: improved quality of life for inhabitants of the watershed, restoration of the environment, and prevention of future injury to human or ecosystem health. Accordingly, the Court ordered the following actions:

- (a) Inspections of all polluting enterprises and implementation of industrial wastewater treatment;
- (b) Closure of all illegal dumps, improvements to landfills, and clean-up of the riverbanks;
- (c) Improvements to the drinking-water, sewage treatment and stormwater infrastructure;
- (d) Development of a regional environmental health plan, including contingencies for emergencies;
- (e) Supervision, by the federal Auditor-General, of the budget allocation for implementing the clean-up plan;
- (f) Forming a committee of non-governmental organizations involved in the litigation to monitor compliance with the Court’s decision;
- (g) Ongoing judicial oversight of the implementation of the plan.⁴⁴

40. These cases illustrate the fact that courts will require governments to take specific actions in order to protect the right to a healthy environment from the deleterious effects of long-term water pollution. Although implementation in both cases has faced challenges, substantial improvements have been made, and courts continue to supervise progress.⁴⁵

41. Other prominent court decisions based on violations of the right to a healthy environment have involved water pollution caused by mining (in Chile, Colombia, Peru, South Africa, Turkey, and Montana in the United States of America); pollution caused by industrial effluent and inadequately treated wastewater (in Argentina, Greece and India); damage to wetlands from proposed development (Mexico); and hydroelectric projects in sensitive ecosystems (in Brazil, Ecuador and Finland).⁴⁶

42. In a recent decision involving water pollution, the Supreme Court of Mexico found that the Government had not taken all possible measures, to the maximum of available resources, to prevent and control processes of water degradation, to carry out monitoring to ensure that the wastewater discharges complied with current regulations in quantity and quality, or to carry out the necessary corrective actions to clean up the water. The Court concluded that it was indispensable that the State monitor compliance with environmental norms and, if necessary, sanction or limit the actions of private individuals, otherwise the human right to a healthy environment would be void of content.⁴⁷

⁴³ *Concerned Residents of Manila Bay et al. v. Metropolitan Manila Development Authority et al.* (2008), General Register Nos. 171947-48, Supreme Court.

⁴⁴ *Beatriz Silvia Mendoza and others v. National Government and others*, Supreme Court of Justice, File M. 1569, 8 July 2008.

⁴⁵ Andrés Napoli, “Riachuelo: a 10 años del fallo de la Corte Suprema de Justicia, aún mucho por hacer”, *Informe Ambiental Anual 2019*.

⁴⁶ For example, Supreme Court of Colombia, *Demanda Generaciones Futuras v. Minambiente*, STC No. 4360-2018, 5 April 2018; and Supreme Court of Mexico, First Chamber, Amparo en Revisión No. 307/2016, 14 November 2018. Other cases are discussed in David R. Boyd, *The Environmental Rights Revolution: A Global Study of Constitutions, Human Rights, and the Environment* (2012).

⁴⁷ Amparo en Revisión No. 641-2017, Supreme Court of Justice, 18 October 2017.

F. Rights of children

43. Every day, more than 700 children under the age of 5 die from water- and sanitation-related diseases.⁴⁸ By 2040, almost 600 million children will live in regions with extremely limited water resources.⁴⁹ Water-related disasters threaten the physical and mental health of youth. Globally, over 500 million children live in extremely high-risk flood zones; 160 million live in areas of high or extremely high drought severity, and 115 million are at high risk from tropical cyclones.⁵⁰

44. The Committee on the Rights of the Child has warned States about the dangers posed by water pollution for children's health, mentioning specifically agrochemicals, illegal mining and inadequate sewage treatment.⁵¹ Children are particularly susceptible to diseases related to water pollution. Early exposure of children to nitrates in water contaminated by agricultural fertilizer run-off stunts their growth and affects brain development, impacting their health in ways that have lifelong consequences. Roundworm, whipworm and hookworm diseases occur through exposure to soil contaminated with faeces, and can affect the nutritional status, growth and cognitive development of children.

45. It is imperative to listen to children's voices. Children submitted the following comments for the present report: "Make sure that the global water situation doesn't get worse, because every child has the right to grow up with access to clean water"; "Children should have the right to rivers with sufficient water, free of litter or harmful substances"; "Ensure clean water for the entire population, especially the most needy"; "Stop pumping sewage into the sea"; and "I want world leaders to take immediate action to save the planet – pass laws to ensure the oceans are clean, pollution is reduced, animals are protected, and life is sustained".⁵²

G. Vulnerable populations

46. States should give special attention to other vulnerable or marginalized groups whose rights may be jeopardized by water pollution and scarcity, including women, indigenous peoples, minority groups, refugees, persons with disabilities, older persons, and people living in poverty. These groups have fewer resources to deal with water pollution and scarcity and tend to be seriously affected. Persons with disabilities and older persons may have less resilient health, increasing the risk of illness or premature mortality caused by contaminated water. Poverty, discrimination and vulnerability are closely related and often intersect. The Committee on the Elimination of Discrimination against Women, the Committee on Economic, Social and Cultural Rights and the Committee on the Elimination of Racial Discrimination have highlighted the importance of protecting vulnerable groups from water pollution from mining, agrochemicals, and inadequate wastewater treatment.⁵³ Special Rapporteurs also have expressed concerns about the impacts of water pollution on vulnerable populations.⁵⁴

47. Concerns about the human rights implications of water scarcity have been raised by treaty bodies and special procedures.⁵⁵ The Committee on Economic, Social and Cultural Rights recognized that a regional water crisis caused increased prevalence of diseases, food shortages, and migration, with wide-ranging implications for human rights.⁵⁶ The Committee

⁴⁸ WHO, *Safer Water, Better Health* (2019 update).

⁴⁹ UNICEF, *Thirsting for a Future: Water and Children in a Changing Climate* (2017).

⁵⁰ UNICEF, *Unless We Act Now: The Impact of Climate Change on Children* (2015).

⁵¹ See CRC/C/PHL/CO/3-4, CRC/C/BRA/CO/2-4, CRC/C/ISR/CO/2-4, CRC/PRK/CO/4 and CRC/C/GEO/CO/3.

⁵² Submission from Children's Environmental Rights Initiative.

⁵³ See CEDAW/C/SUR/CO/4-6, CEDAW/C/GUY/CO/9, E/C.12/URY/CO/5, E/C.12/TGO/CO/1, E/C.12/MDA/CO/2, E/C.12/ROU/CO/3-5, E/C.12/MNG/CO/4, E/C.12/VNM/CO/2-4 and CERD/C/NER/CO/15-21.

⁵⁴ See A/HRC/28/64/Add.2, A/HRC/43/53/Add.1, A/HRC/39/48/Add.1 and A/HRC/15/22/Add.2.

⁵⁵ See E/C.12/ISR/CO/4, CERD/C/SLV/CO/18-19, CRC/C/GTM/CO/3-4, CEDAW/C/HND/CO/7-8, CEDAW/C/PRY/CO/6 and CEDAW/C/PER/CO/7-8.

⁵⁶ See E/C.12/IRQ/CO/4.

on the Elimination of Discrimination against Women expressed concerns about the disproportionate impacts on women of water scarcity caused or exacerbated by industrial agriculture, hydroelectric projects and climate change, as well as about the dangers faced by women serving as environmental human rights defenders to protect water.⁵⁷ The Independent Expert on human rights and international solidarity expressed concerns about increasingly frequent droughts, linked to climate change, exacerbating water scarcity and jeopardizing food production.⁵⁸

48. Women are often primarily responsible for providing, using and managing household water, in both rural and urban settings. Without safe, sufficient water (as well as adequate sanitation and hygiene facilities), it is harder for women and girls to lead healthy, dignified and productive lives. Girls and women from minority ethnic groups may suffer multiple forms of exclusion and oppression. Women also suffer disproportionately from the impacts of climate-related disasters, for example flooding, as they have to travel greater distances to secure water, heightening their risks of being subjected to violence. They spend more time caring for people afflicted by waterborne diseases. Yet women often are less involved in water planning, policymaking and decision-making. These inequalities based on gender create vast divides between men and women in their ability to access, manage and benefit from water, sanitation and hygiene.

49. Nevertheless, women can be key actors in changing the way water is used, allocated and managed, despite economic, legal, institutional and cultural barriers. Investments in safe, sufficient water and adequate sanitation increase educational opportunities for girls and facilitate access to employment opportunities for women.

50. In many countries, indigenous peoples, people of African descent and local communities have borne an unfair burden of water pollution related to industrial activities. The Committee on the Elimination of Racial Discrimination has reported on the devastating impacts of water pollution on indigenous peoples.⁵⁹ The Special Rapporteur on the rights of indigenous peoples has called upon States to “recognize and respect community water management systems and guarantee access to the resource. All necessary measures should be taken to prevent or reverse the serious impact of water pollution on the well-being and rights of indigenous peoples to food, health and a healthy environment.”⁶⁰ States have often failed to recognize the land and water rights and tenures that are needed by these communities in order to secure their human rights.⁶¹ Community-based water rights receive less attention than land rights, customary law and traditional knowledge are undervalued, and stewardship responsibilities are not recognized by States. In Australia, the cultural rights of indigenous peoples are being devastated by climate change and by water infrastructure such as dams and levees that have destroyed sacred sites.⁶²

51. Achieving Sustainable Development Goal 6 will be challenging for States grappling with water scarcity, especially low-income States and small island States. Many of these States face naturally limited water supplies, growing populations, increasing urbanization, inadequate drinking water and wastewater infrastructure, and insufficient financial, human and institutional capacity. These challenges are exacerbated by extreme weather events, droughts and floods, which climate change is making more intense.

⁵⁷ See CEDAW/C/HND/CO/7-8.

⁵⁸ See A/HRC/38/40/Add.1.

⁵⁹ See CERD/C/CAN/CO/21-23 and CERD/C/GTM/CO/12-13.

⁶⁰ See A/HRC/42/37/Add.1.

⁶¹ Rights and Resources Initiative and Environmental Law Institute, *Whose Water? A Comparative Analysis of National Laws and Regulations Recognizing Indigenous Peoples', Afrodescendants' and Local Communities' Water Tenure* (August 2020).

⁶² Submission from Dharriwaa Elders Group.

IV. Human rights obligations relating to clean, safe and sufficient water

52. The human rights obligations related to water pollution and scarcity have been described by the Human Rights Council, special procedures, and treaty bodies. These experts have reached two common conclusions. First, water pollution and scarcity threaten a broad range of human rights, including the rights to water, sanitation and a healthy environment. Second, as a result, States have extensive human rights obligations. These are legally enforceable obligations, not policy options or mere aspirations, reflecting existing commitments pursuant to international human rights law.⁶³ Experts observe that “the human rights system offers opportunities to streamline global and national water governance, and to provide coherence, both in terms of environmental sustainability and in terms of human development”.⁶⁴

A. State obligations

53. States should apply a rights-based approach to all aspects of allocating, using, conserving, protecting and restoring water. Applying a rights-based approach clarifies the obligations of States and businesses, emphasizes the need for capacity-building, catalyses ambitious action, prioritizes improving conditions for the poorest and most vulnerable, and empowers people to become involved in designing and implementing solutions.

54. The framework principles on human rights and the environment clarify three categories of State obligations: procedural obligations, substantive obligations, and special obligations towards those in vulnerable situations.⁶⁵ States have procedural obligations to:

(a) Incorporate water in the educational curriculum at all levels and provide the public with accessible, affordable information about the intrinsic value of water, the importance of safe, sufficient water and healthy freshwater ecosystems, and the causes and consequences of water pollution, water scarcity and water-related disasters;

(b) Ensure an inclusive, equitable and gender-based approach to public participation in all planning and actions related to the allocation, conservation and sustainable use of water;

(c) Enable affordable and timely access to justice and effective remedies for all, to hold States and businesses accountable for fulfilling their obligations and responsibilities related to safe, sufficient water and healthy freshwater ecosystems;

(d) Assess the potential environmental, social, health, cultural and human rights impacts of all plans, policies, projects and proposals that could pollute, waste, damage, destroy or diminish water and freshwater ecosystems;⁶⁶

(e) Integrate gender equality into all plans and actions to allocate, use, conserve, protect, restore and equitably share the benefits of safe, sufficient water and healthy freshwater ecosystems, empowering women to play leadership roles in water governance;

(f) Respect the rights of indigenous peoples, local communities, Afrodescendants and peasants in all actions related to water and healthy aquatic ecosystems, including legal recognition of traditional knowledge, customary laws, collective ownership, and indigenous peoples’ right to free, prior and informed consent;

(g) Provide strong protection for environmental human rights defenders working on water-related issues. States must vigilantly protect defenders from intimidation, criminalization and violence, diligently investigate, prosecute and punish the perpetrators of

⁶³ See A/HRC/25/53.

⁶⁴ Cap-Net and United Nations Development Programme, *Climate Change Adaptation and Integrated Water Resources Management*, p. 23.

⁶⁵ A/HRC/37/59, annex.

⁶⁶ See A/74/197.

those crimes, and address the root causes of conflict generated by environmental degradation or threats of environmental degradation.⁶⁷

55. With respect to substantive obligations, States must not violate the right to a healthy environment or other human rights related to water through their own actions, must protect those rights from being violated by third parties, in particular businesses, and must establish, implement and enforce laws, policies and programmes to fulfil these rights.⁶⁸

56. In its general comment No. 15 (2002) on the right to water, the Committee on Economic, Social and Cultural Rights identified substantive obligations related to preventing water pollution and scarcity. The Committee wrote that States must take steps on a non-discriminatory basis to prevent threats to health from unsafe and toxic water conditions, ensure that natural water resources are protected from contamination by harmful substances and pathogenic microbes and monitor and combat situations where aquatic ecosystems serve as a habitat for vectors of diseases.⁶⁹ The Committee also wrote that States must refrain from unlawfully diminishing or polluting water and must adopt necessary and effective legislative and other measures to restrain third parties from polluting and inequitably extracting water.⁷⁰ Examples of violations of State obligations include “pollution and diminution of water resources affecting human health”, “failure to enact or enforce laws to prevent the contamination and inequitable extraction of water”, and “failure to adopt or implement a national water policy”.⁷¹

57. The Committee summarized the substantive obligations of States to ensure safe, sufficient water and healthy freshwater ecosystems:

States parties should adopt comprehensive and integrated strategies and programmes to ensure that there is sufficient and safe water for present and future generations. Such strategies and programmes may include: (a) reducing depletion of water resources through unsustainable extraction, diversion and damming; (b) reducing and eliminating contamination of watersheds and water-related ecosystems by substances such as radiation, harmful chemicals and human excreta; (c) monitoring water reserves; (d) ensuring that proposed developments do not interfere with access to adequate water; (e) assessing the impacts of actions that may impinge upon water availability and natural-ecosystems watersheds, such as climate changes, desertification and increased soil salinity, deforestation and loss of biodiversity; (f) increasing the efficient use of water by end users; (g) reducing water wastage in its distribution; (h) response mechanisms for emergency situations; and (i) establishing competent institutions and appropriate institutional arrangements to carry out the strategies and programmes.⁷²

58. During the universal periodic review, States have been urged to develop comprehensive strategies to reduce water pollution.⁷³ In the context of safe and sufficient water, a rights-based approach demands “that States prioritize addressing the most urgent and serious impacts on human rights, whether they stem from domestic, industrial or agricultural water contamination”.⁷⁴ States have particular obligations to indigenous peoples, local communities, peasants, women, children, minorities, persons with disabilities, older persons and other potentially disadvantaged or vulnerable communities.

59. Sixty per cent of the world’s fresh water is in ecosystems shared by two or more States. States have an obligation to cooperate internationally to ensure that transboundary rivers, lakes and aquifers are managed in an equitable and sustainable manner, by sharing information, transferring technologies, building capacity, increasing research, honouring

⁶⁷ See A/HRC/25/55 and A/71/281.

⁶⁸ See E/1991/23-E/C.12/1990/8.

⁶⁹ Committee on Economic, Social and Cultural Rights, general comment No. 15 (2002) on the right to water, para. 8.

⁷⁰ *Ibid.*, paras. 21 and 23.

⁷¹ *Ibid.*, para. 44.

⁷² *Ibid.*, para. 28.

⁷³ See A/HRC/29/17, A/HRC/33/4 and A/HRC/40/6.

⁷⁴ See A/68/264.

international commitments and ensuring just and sustainable outcomes for vulnerable and marginalized communities. States are obliged to ensure that activities within their jurisdiction or control do not cause serious harm to the environment, including waterbodies, or to peoples of other States or to areas beyond the limits of national jurisdiction.⁷⁵

60. Wealthy States must contribute more towards the costs of securing safe, sufficient water and healthy aquatic ecosystems in low-income countries. To avoid exacerbating debt problems, water-related financial assistance to low-income countries should consist of grants, not loans. The global amount of official development assistance dedicated to drinking water, sanitation, wastewater treatment, water conservation and management, agricultural water use and flood protection in 2018 was only \$9.4 billion, far below what is urgently needed. These funds must be increased, targeted, effective and sustainable.⁷⁶

61. Human rights demand that States prioritize action to improve the lives and livelihoods of the most disadvantaged people. There are seven key steps, detailed below, that States must take to apply a rights-based approach to water governance: (a) prepare a state-of-the-water assessment that includes information on water quality, sources of pollution, water supply, users of water, related land-use activities, and impacts on human rights, human health and ecosystem health, with a particular focus on vulnerable and marginalized groups; (b) conduct a legal mapping initiative to ensure that the human rights to water, sanitation and a healthy environment are incorporated in water and wastewater laws, regulations, standards and policies, and ensure that these instruments prioritize human rights in allocation decisions and identify and correct gaps and weaknesses; (c) develop or revise water-related plans to incorporate a rights-based approach; (d) implement water-related plans and enforce water-related laws, regulations and standards; and (e) evaluate progress and, if necessary, strengthen actions to ensure that human rights are fulfilled.⁷⁷ Two additional actions must be taken at every step of the process: (f) building human, financial and institutional capacity; and (g) informing and engaging the public, particularly women and vulnerable and marginalized groups.

1. State-of-the-water assessment

62. States must monitor water quality, water quantity, water distribution, access to safely managed water and sanitation, and risks. States also require information on the main users and polluters of water (agricultural, industrial, commercial and institutional, and households). This information should be synthesized into a public state-of-the-water assessment.

63. Monitoring is a prerequisite to fulfilling a State's obligation to provide information to the public and is essential to effective and equitable policymaking. For example, analysis of wastewater sources and their relative health and environmental risks enables States to identify pollution hotspots and prioritize enforcement actions and investments in pollution control. Monitoring is also important for assessing the status of groundwater and aquatic ecosystems and the need for protection or restoration. Unfortunately, fewer than half of States have comparable data available on progress towards the targets under Sustainable Development Goal 6.⁷⁸

64. The use of Earth-observation satellites, citizen science, private sector data, and new technologies (e.g. remote sensors), can address data gaps and improve information quality. States can benefit from several United Nations-led monitoring mechanisms for Sustainable Development Goal 6: the Global Expanded Water Monitoring Initiative, the Joint Monitoring Programme for Water Supply, Sanitation and Hygiene and the Global Analysis and Assessment of Sanitation and Drinking Water.

⁷⁵ *Pulp Mills on the River Uruguay (Argentina v. Uruguay)*, Judgment, I.C.J. Reports 2010; and Inter-American Court of Human Rights, Advisory Opinion OC-23/17, 15 November 2017, para. 101.

⁷⁶ WaterAid, "Raising the high-water mark for WASH aid" (2020).

⁷⁷ Cap-Net et al., *Human Rights-based Approach to Integrated Water Resources Management: Training Manual and Facilitator's Guide* (2017).

⁷⁸ UN-Water, *Sustainable Development Goal 6: Synthesis Report on Water and Sanitation – 2018*.

2. Legal mapping and strengthening initiative

65. A legal mapping and strengthening initiative reviews current water- and wastewater-related laws, regulations, standards and policies in order to identify gaps and weaknesses and to ensure that a rights-based approach is always included. Commitments related to international treaties (e.g. the United Nations water conventions, the Ramsar Convention) are relevant. All States should incorporate the right to a healthy environment, as well as the rights to water and sanitation, in national constitutions and legislation. To effectively limit water pollution, ameliorate water scarcity and protect freshwater ecosystems, regulations must target all sectors and all regions, prioritizing the most urgent challenges, which often affect vulnerable and marginalized populations.

66. States must “establish and maintain substantive environmental standards that are non-discriminatory, non-retrogressive and otherwise respect, protect and fulfil human rights”.⁷⁹ All States should enact and enforce national standards for drinking water quality and wastewater effluent quality, while banning particularly hazardous substances. Regulations should also set standards for improving the collection, treatment and reuse of wastewater, agricultural run-off and urban run-off, and improving sludge management. National standards must take into consideration the best interests of children.⁸⁰ States should follow the United Nations Environment Programme Framework for Freshwater Ecosystem Management, and guidance from WHO on standards for drinking water quality and safe use of wastewater, excreta and greywater. Clear standards increase accountability. While the majority of States have established standards for drinking water quality, in many States water quality does not meet those standards, pointing to implementation problems.⁸¹

67. Laws and policies should require application of the precautionary, prevention, polluter pays, sustainable development, equity, non-regression and intergenerational solidarity principles in all decisions involving potential impacts on water quality, water quantity and the health of freshwater ecosystems.⁸²

68. In laws and policies, States must prioritize water for personal and domestic uses (to fulfil the rights to water and sanitation) and for small-scale agriculture (to fulfil the right to food).⁸³ In order to fulfil the right to a healthy environment, States must also legislate and prioritize environmental flows, allocating safe, sufficient and timely flows of water to freshwater ecosystems.

69. A final legislative imperative is recognizing the rights of indigenous peoples, Afrodescendants, peasants, local communities and women to use, protect and govern water. These rights, associated rights related to land titles and tenures, customary laws, customary governance systems, and the value of traditional ecological knowledge should be explicitly incorporated in legislation.⁸⁴

3. Develop or revise water plans to incorporate a rights-based approach

70. It is imperative that human rights be placed at the centre of all water- and wastewater-related plans. This is the best way to ensure that marginalized and vulnerable groups are involved in planning and decision-making, and that their rights are prioritized in all decisions related to water use and conservation. For many practitioners in the water sector, particularly those with a technical background, the need to integrate human rights into processes and plans will be new and unfamiliar. Equity training is essential.⁸⁵

⁷⁹ A/HRC/37/59, annex, framework principle 11.

⁸⁰ Convention on the Rights of the Child, art. 3 (1).

⁸¹ WHO, *A Global Overview of National Regulations and Standards for Drinking-Water Quality* (2018).

⁸² Human Rights Committee, general comment No. 36 (2018) on the right to life, para. 62. See also A/HRC/12/24/Add.1.

⁸³ Committee on Economic, Social and Cultural Rights, general comment No. 15 (2002) on the right to water.

⁸⁴ Rights and Resources Initiative and Environmental Law Institute, *Whose Water? A Comparative Analysis of National Laws and Regulations Recognizing Indigenous Peoples', Afrodescendants' and Local Communities' Water Tenure*.

⁸⁵ WHO, *A Guide to Equitable Water Safety Planning: Ensuring No One Is Left Behind* (2019).

71. Among the plans that should incorporate a rights-based approach are water safety plans, integrated water resources management, and disaster risk reduction plans. Implementing a rights-based approach offers the added benefit of integrating these often siloed plans. Water safety plans apply a proactive, comprehensive risk assessment and risk management approach to ensure the safety and security of drinking-water supplies.⁸⁶ Historically, however, they have not applied a rights-based approach. This must change.⁸⁷ Water safety plans increase societal resilience by addressing the anticipated impacts of climate change, the potential for flood damage, the sufficiency of source water and alternative supplies, the availability and reliability of power supplies, and emergency plans.⁸⁸ Fewer than half of States currently have water safety plans.⁸⁹

72. Integrated water resources management, a key aspect of Sustainable Development Goal 6, is a process that promotes the coordinated development and management of aquatic and terrestrial ecosystems in order to maximize economic and social welfare in an equitable manner without compromising ecosystem sustainability. Incorporating human rights into integrated water resources management will ensure that decisions about water allocation prioritize human rights. As the United Nations Development Programme recently noted, “integrated water resources management and human rights are interconnected. Integrated water resources management is a cornerstone of water governance, and water governance is, in turn, essential for the realization of human rights.”⁹⁰

73. The Sendai Framework for Disaster Risk Reduction includes the following priority areas: understanding disaster risks, strengthening disaster risk governance to manage risks, investing in disaster risk reduction for resilience, and enhancing disaster preparedness for effective responses to enable building back better in recovery, rehabilitation and reconstruction. Because so many disasters involve water, it is essential to increase the resilience of water infrastructure and aquatic ecosystems. The Intergovernmental Panel on Climate Change defines resilience as “the capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation”.⁹¹

4. Implement water-related plans and enforce laws, regulations and standards

74. Implementation is a major challenge. Most States have laws and policies that are intended to achieve safe and sufficient water but experience a large gap between words on paper and actions on the ground. Environmental laws, regulations and standards are useless if they are not implemented and enforced. States must ensure the effective enforcement of their environmental standards against public and private actors.⁹² Sufficient human and financial resources must be allocated to government agencies responsible for enforcing water and wastewater laws, regulations and standards.

75. The principle of progressive realization acknowledges that while the right to a healthy environment may not be fulfilled immediately, States are obligated to move as expeditiously and effectively as possible towards the goal of full realization, applying the maximum available resources. Some obligations, such as non-discrimination and non-regression, are immediate.

76. Accountability mechanisms are essential. States must ensure that people have access to remedies, through judicial or similar processes, when their right to a healthy environment, including safe, sufficient water and healthy freshwater ecosystems, is being threatened or

⁸⁶ WHO and International Water Association, *Water Safety Plan Manual* (2009).

⁸⁷ WHO, *A Guide to Equitable Water Safety Planning: Ensuring No One Is Left Behind*.

⁸⁸ WHO, *Climate-resilient Water Safety Plans: Managing Health Risks Associated with Climate Variability and Change* (2017).

⁸⁹ WHO, *Global Status Report on Water Safety Plans: A Review of Proactive Risk Assessment and Risk Management Practices to Ensure the Safety of Drinking Water* (2017).

⁹⁰ Cap-Net and United Nations Development Programme, *Climate Change Adaptation and Integrated Water Resources Management*, p. 23.

⁹¹ Intergovernmental Panel on Climate Change, *Global Warming of 1.5°C* (2018).

⁹² A/HRC/37/59, annex, framework principle 12.

violated or when other human rights obligations related to water are not being fulfilled. In many States, efforts to improve the environmental rule of law (e.g. strengthening institutions, reducing corruption) are needed to enable effective implementation and enforcement.

5. Evaluate progress

77. An essential step towards ensuring safe, sufficient water and healthy freshwater ecosystems is to evaluate progress (or the lack thereof) on a regular basis and revise laws, regulations, plans and policies accordingly. A particular focus should be on the extent to which conditions are improving for vulnerable and marginalized populations, which requires directly engaging them in the evaluation process.

6. Build capacity

78. The lack of human, institutional and financial capacity is a major reason why the world is not on track to achieve Sustainable Development Goal 6 by 2030. It is estimated that achieving the safe drinking water and sanitation goals would cost \$114 billion per year until 2030.⁹³ This sounds like a large sum, but is a drop in the bucket compared to the size of the global economy. The cost of achieving the broader Goal 6 targets will be substantially larger. However, it is essential to emphasize that investments in water produce major net benefits, through reduced health-care costs, higher labour productivity and higher labour participation. WHO estimates \$4 to \$5 in benefits for every dollar invested in water.⁹⁴ The world needs to triple its investments in water and sanitation in order to meet Goal 6 by 2030.⁹⁵ Subsidies need to be smart, targeted and effectively implemented, prioritizing services for poor and marginalized communities.

79. States must ensure that responsible agencies and local authorities have the necessary financial, human and other resources to fulfil their duties effectively. Institutional development and capacity-building are essential to ensure that laws and policies can be implemented and enforced. Agencies managing activities that potentially use, pollute or harm water systems must be sufficiently independent from businesses to avoid bias, regulatory capture, or interference. Empowering indigenous peoples, Afrodescendants, peasants and local communities to play key roles in water governance is an important element of a rights-based approach.

7. Inform, engage and empower the public

80. Education is vital to empowering all persons to be responsible stewards of water, and to developing a strong ethic towards this irreplaceable, life-giving substance. States must take steps to ensure inclusive and accessible communication with people who speak different languages, lack television, radio or Internet access, have lower literacy levels or have disabilities. A rights-based approach prioritizes engaging and empowering potentially marginalized and vulnerable populations so they can play an active role in policymaking and decision-making about water. Dedicated investments in women's empowerment are vital, as evidence shows that involving women in water projects makes the projects more sustainable, more effective and up to seven times as efficient.⁹⁶

B. Responsibilities of businesses

81. Businesses are a major contributor to water pollution, water overuse, and degradation of freshwater ecosystems, through deforestation, the damming of rivers, the extracting, transporting and burning of fossil fuels, industrial agriculture, intensive livestock operations, industrial fisheries, the fashion and textile industries, large-scale mining, and the commodification of water and nature. Businesses have outsourced many activities that pollute, overuse water and damage freshwater ecosystems from high-income nations to low-

⁹³ G. Hutton and M. Varughese, *The Costs of Meeting the 2030 Sustainable Development Goal Targets on Drinking Water, Sanitation, and Hygiene* (World Bank Group, 2016).

⁹⁴ See www.who.int/water_sanitation_health/monitoring/economics/en/.

⁹⁵ See www.unwater.org/water-facts/financing/.

⁹⁶ See www.watergovernance.org/focus-area-post/gender/.

income nations, exploiting environmental and human rights standards that are lower or not enforced.

82. Businesses must adopt human rights policies, conduct human rights due diligence, establish transparent and effective grievance mechanisms, remedy human rights violations for which they are directly responsible, and work to influence other actors to respect human rights where relationships of leverage exist. All businesses should comply with the Guiding Principles on Business and Human Rights as they apply to activities carried out by the business, its subsidiaries or its supply chains. Businesses should prioritize respect for the rights of indigenous peoples, local communities and peasants and avoid projects or activities that could jeopardize human rights related to safe, sufficient water and the health of freshwater ecosystems.

83. Businesses should reduce water pollution, water use, and damage to freshwater ecosystems from their own activities, subsidiaries and suppliers, reduce use of and adverse impacts on water from the use of their products and services, and publicly disclose their use of and adverse impacts on water. In addition, businesses should support, rather than oppose, laws and policies intended to fulfil human rights and to effectively conserve, protect, restore and ensure the sustainable use of water and freshwater ecosystems.

V. Good practices

84. There are countless examples of good practices in making progress towards safe, sufficient water and healthy freshwater ecosystems, although implementation gaps are ubiquitous. At the international level, there are global treaties such as the Convention on the Protection and Use of Transboundary Watercourses and International Lakes (and the associated Protocol on Water and Health) and the Convention on the Law of the Non-navigational Uses of International Watercourses. There are regional agreements for transboundary cooperation (e.g. the Boundary Waters Treaty, between Canada and the United States of America; the Guarani Aquifer Agreement, of 2010, involving Argentina, Brazil, Paraguay and Uruguay; and the agreement for the management of the Stampriet Transboundary Aquifer System reached by Botswana, Namibia and South Africa). The Water Framework Directive, of the European Union, requires all European surface water and groundwater to achieve “good ecological status”. A water education curriculum focused on Africa has been developed by the United Nations Educational, Scientific and Cultural Organization (UNESCO).

85. At the national level, good practices include constitutional protection for water (e.g. in Brazil, Croatia, Ecuador, Egypt, Slovenia and Uruguay), strong laws (e.g. the National Water Act, in South Africa), policies that empower women (e.g. the Rural Water Supply Policy, in Nepal), innovative approaches to conserving water and recycling wastewater (e.g. in Singapore), and legal developments that recognize the rights of rivers, lakes and watersheds (in Bangladesh, the Plurinational State of Bolivia, Colombia, Ecuador, India and New Zealand). Details of these and other good practices are reported separately.⁹⁷

VI. Conclusions and recommendations

86. Water is life, and yet pollution and scarcity are worsening. Water-related disasters are increasingly frequent and severe. Freshwater ecosystems are rapidly deteriorating. Given the devastating impacts of the global water crisis on people’s lives, health and human rights, remedial actions must be taken rapidly and systematically, with priority placed on improving conditions for the most vulnerable. Fulfilling the rights to water, sanitation and a healthy environment is essential for achieving Sustainable Development Goal 6 and other Sustainable Development Goals, including those on ending poverty, healthy lives for all, sustainable cities, flourishing biodiversity, and effective action to address climate change. Yet States are not on track to meet Goal 6. According to the Secretary-General of the United Nations, Antonio Guterres, “If we

⁹⁷ See www.ohchr.org/EN/Issues/Environment/SREnvironment/Pages/HealthyEcosystems.aspx.

remain off track to deliver on Sustainable Development Goal 6 then we jeopardize the entire 2030 Agenda for Sustainable Development.”⁹⁸

87. Water pollution, water scarcity, damage to freshwater ecosystems and adverse effects from water-related disasters are preventable problems. The solutions – rights-based water and wastewater laws, standards, and policies, capacity-building programmes, increased investments, improved technologies, and accountability mechanisms – are known. Investment in sustainable water governance and infrastructure must be scaled up substantially. According to the Organization for Economic Cooperation and Development, transformation to a water-secure world by 2030 requires additional annual investments of up to \$500 billion.⁹⁹ However, the benefits of safe, sufficient water and healthy aquatic ecosystems for all of humanity are incalculable. Making the required investments is an obligation, not an option, in order to fulfil the human rights of present and future generations.

88. In order to respect, protect and fulfil water-related aspects of the right to a healthy environment, States must implement the seven steps of rights-based water governance outlined in paragraphs 61–80 above (capacity-building, public engagement and empowerment, monitoring, legal mapping and strengthening, development of rights-based plans, implementation and evaluation).

89. The right to a healthy environment requires States to prevent water pollution and depletion, prevent or mitigate water-related disasters and protect or restore aquatic ecosystems. As part of implementing the rights-based approach to ensuring safe, sufficient water and healthy aquatic ecosystems, States should take the following actions:

International actions

(a) Support United Nations resolutions recognizing the right to a safe, clean, healthy and sustainable environment;

(b) Increase transboundary cooperation by joining the United Nations water conventions (the Convention on the Protection and Use of Transboundary Watercourses and International Lakes and the Convention on the Law of the Non-navigational Uses of International Watercourses) and creating transboundary protected areas;

(c) Increase finance, capacity-building and technology transfer through higher levels of official development assistance, with increased focus on effective, rights-based water governance;

(d) Accelerate implementation of treaties that address water pollution, such as the Minamata Convention on Mercury and the Stockholm Convention on Persistent Organic Pollutants (including the addition to the latter treaty of new substances to be controlled, e.g. a group of toxic chemicals called per- and polyfluoroalkyl substances, or PFAS, that are contaminating water across the world);¹⁰⁰

(e) Complete negotiations for a new United Nations treaty on businesses and human rights that imposes mandatory obligations on businesses to respect human rights, to conduct human rights due diligence and to ensure that victims have access to justice and effective remedies;

(f) Negotiate a comprehensive new treaty to deal with plastic waste, rooted in the principles of waste reduction (e.g. banning non-essential single-use plastics), polluter pays, precaution, and extended producer responsibility;

⁹⁸ UN-Water, *Sustainable Development Goal 6: Synthesis Report on Water and Sanitation – 2018*, p. 5.

⁹⁹ C.W. Sadoff et al., *Securing Water, Sustaining Growth: Report of the GWP-OECD Task Force on Water Security and Sustainable Growth* (2015).

¹⁰⁰ The European Union recently committed itself to phasing out the use of PFAS. See <https://ec.europa.eu/environment/pdf/chemicals/2020/10/Strategy.pdf>.

(g) Increase accountability by ratifying the Optional Protocol to the International Covenant on Economic, Social and Cultural Rights and the Optional Protocol to the Convention on the Rights of the Child on a communications procedure;

Actions to maintain or improve water quality

(h) Apply the waste management hierarchy to wastewater (prevent, reduce, reuse, recover, recycle), as recycling, reusing and recovering what was previously considered waste can alleviate water scarcity and provide many social, economic and environmental benefits;¹⁰¹

(i) Accelerate efforts to shift to a circular economy – which includes the safe reuse and recycling of water and wastewater, and redesigning products and processes to phase out water pollution;

(j) Enact stricter regulations and standards for wastewater discharge, impose fees on businesses that pollute water, and dedicate this revenue to protecting and restoring the health of freshwater ecosystems;

(k) Increase investment in wastewater infrastructure, including energy recovery and nutrient recycling;

(l) Apply ecosystem-based watershed management to protect the sources of water, both surface water and groundwater, to promote healthy forests, to reduce agricultural impacts on water bodies, to reduce flood risks, and to increase climate resilience;

(m) Use nature-based solutions such as restoring or constructing wetlands, requiring riparian buffer strips and creating protected areas (safeguarding water sources through protected areas provides all or a significant proportion of drinking water to dozens of the world's largest cities, including New York, Sydney, Vancouver, Nairobi and Tokyo);¹⁰²

Actions to prevent or alleviate water scarcity

(n) Clarify, in legislation, priorities for access to water, with the highest priority accorded to fulfilling human rights to water, sanitation, livelihoods (including small-scale food production) and a healthy environment;

(o) Guarantee, in legislation, environmental flows for rivers and wetlands, ensuring that the quantity, timing and quality of freshwater flows are sufficient to sustain healthy aquatic ecosystems and the human livelihoods and well-being that depend on them;

(p) Shift economic activities to less water-consuming sectors and increase water-use efficiency in all sectors, with a particular focus on agriculture;

(q) Require users, especially businesses, to pay for water and for wastewater treatment, with safeguards to protect human rights by ensuring that access to water and sanitation is available and affordable to low-income individuals and communities;

(r) Safely use wastewater and sludge in agriculture, horticulture and aquaculture to conserve water, to support the right to food, to reduce the use of chemical fertilizers and to recover some of the cost of sanitation services;

(s) Require building construction and retrofits to incorporate measures such as rainwater harvesting, composting toilets, and low-flow fixtures, and establish regulations for water efficiency of appliances;

¹⁰¹ World Water Assessment Programme, *The United Nations World Water Development Report 2017: Wastewater: the Untapped Resource* (Paris, UNESCO, 2017).

¹⁰² WHO and Secretariat of the Convention on Biological Diversity, *Connecting Global Priorities: Biodiversity and Human Health: A State of Knowledge Review* (2015).

(t) Consider desalination as a last-resort option, due to high cost, high energy use and high environmental impacts, recognizing that it may be necessary in some water-scarce contexts;

Actions to improve water governance

(u) Increase access to information, public participation in decision-making and access to justice, with a particular emphasis on increasing the role of women in decision-making and governance at all levels;

(v) Recognize, in law, the land and water titles, tenures, rights and responsibilities of indigenous peoples, Afrodescendants, peasants and local communities, enabling them to apply customary laws, traditional ecological knowledge and their own governance systems to the sustainable stewardship of water;

(w) Enact legislation guaranteeing the free, prior and informed consent of indigenous peoples for all projects or programmes that could harm water in their territories;

(x) Avoid the privatization and commodification of water, which as the source of life must be treated as an invaluable and irreplaceable asset;

(y) Conduct assessments of the environmental, social, cultural and human rights impacts of proposed megaprojects that could use or pollute water;

Actions to prevent water-related disasters and increase resilience

(z) Increase the ambition of nationally determined contributions pursuant to the Paris Agreement;

(aa) Implement commitments under the Sendai Framework for Disaster Risk Reduction;

(bb) Carry out watershed and floodplain restoration, increase water storage using decentralized water retention systems, and build green infrastructure to reduce flood risks;

(cc) Reduce or eliminate construction in high-risk flood zones, and establish rights-based relocation programmes for people already living in these areas;

(dd) Ensure that drinking-water and wastewater infrastructure are built to incorporate risks related to floods and other extreme weather events;

Actions to achieve water and climate co-benefits

(ee) Reduce greenhouse gas emissions from water and wastewater management through demand management, reduced water loss in distribution systems, energy efficiency improvements and energy recovery;

(ff) Implement nature-based solutions, including conservation, restoration and rewetting of wetlands and peatlands, reforestation, riparian buffer strips and green roofs;¹⁰³

(gg) Improve agricultural practices by shifting to less water-intensive and more drought-tolerant crops, using high-efficiency irrigation systems, reducing fertilizer run-off, safely using treated wastewater, and altering flooding regimes for rice paddies;

(hh) Prohibit activities such as fracking, tar sands extraction and coal mining, that pollute water and exacerbate the climate crisis;

(ii) Promote behavioural shifts (e.g. water conservation actions, predominantly plant-based diets, planting trees, and reducing food waste);

¹⁰³ World Water Assessment Programme and UN-Water, *The United Nations World Water Development Report 2018: Nature-based Solutions for Water* (Paris, UNESCO, 2018).

(jj) **Reduce discharges of untreated or inadequately treated wastewater, which produce powerful greenhouse gases including methane and nitrous oxide, properly treat faecal sludge, and recover nutrients (nitrogen and phosphorous) from wastewater;**

(kk) **Incorporate water issues in nationally determined contributions and national adaptation plans.**¹⁰⁴

90. **In order to fulfil their responsibility to respect the human rights to water, sanitation and a healthy environment, businesses should:**

(a) **Make every effort to reduce water use, water pollution and damage to freshwater ecosystems from their facilities, products and supply chains;**

(b) **Accelerate the transition away from fossil fuels;**

(c) **Embrace the economic opportunities presented by water conservation, the construction of water and wastewater infrastructure, and ecosystem restoration;**

(d) **Support the incorporation of rights-based approaches in water and wastewater laws and policies;**

(e) **Contribute to and support efforts to shift towards the goal of a pollution-free circular economy.**

91. **As the High-level Panel on Water concluded in 2018, “Whoever you are, whatever you do, wherever you live, we urge you get involved, and contribute to meeting this great challenge: safe water and sanitation for all, and our water managed sustainably. Make every drop count. It’s time for action.”**

¹⁰⁴ Ingrid Timboe, Kathryn Pharr and John H. Matthews, *Watering the NDCs: National Climate Planning for 2020 and Beyond: How Water-Aware Climate Policies Can Strengthen Climate Change Mitigation and Adaptation Goals*.