

Climate Change and the Human Rights to Water and Sanitation¹

Position Paper

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Executive summary

At present, 2-3 billion people do not have access to safe drinking water, 884 million lack access to an improved water source, 2.6 billion do not have access to improved sanitation, and 1.1 billion still practice open defecation.² The human rights to water and sanitation are inextricably linked, in functional and normative terms. These rights are fundamental to human dignity and essential for the realisation of many other internationally recognised human rights. They are also the foundations for public health and human development. For example, an estimated 1.6 million people, mostly children under the age of five, die each year from water and sanitation-related diseases. Poor sanitation may be linked to as much as a quarter of all under-five deaths, with diarrhoea among the leading causes. The outrage, in these cases, is numbed by the statistics.

Climate change presents a serious obstacle to the realisation of the rights to water and sanitation. Water is a key medium through which climate change impacts upon human populations and ecosystems, particularly due to predicted changes in water quality and quantity. The impacts of climate change need to be seen in light of its direct effects on water resources as well as its indirect influence on other external drivers of change, in particular increasing population pressures and changing consumption patterns. The Intergovernmental Panel on Climate Change (IPCC) has warned that in many regions of the globe, changes to the supply and quality of freshwater resources resulting from climate change may imperil sustainable development, poverty reduction and child mortality goals.³

The rights to water and to sanitation impose specific legal obligations, which climate change policy responses must take into account. The human right to water means that everyone has the right to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses, without discrimination. The right to sanitation means that everyone has the right to access to sanitation which is safe, hygienic, secure, socially and culturally acceptable, and that provides privacy and ensures dignity, without discrimination. As with all socio-economic rights, the rights to water and sanitation entail obligations of both an immediate and progressive kind. While human rights duties are owed principally by the State to individuals within that State's own territory, there is increasing support in international law for duties of States to respect and protect human rights in third countries (including qualified duties to ensure that transnational corporations do not violate human rights elsewhere), and cooperate to support the realisation of human rights globally.

Not every adverse impact of climate change constitutes a human rights violation. The right to water "for personal and domestic uses" requires only a small fraction of the overall water supply. Lack of sufficient access to water for household use is more a function of power, poverty and inequality, and a failure of governments to prioritise water allocation for basic needs and human dignity, than it is about scarcity *per se*. Moreover the question of whether a duty-bearer (usually the State) has failed in its duty is a context-specific inquiry, complicated in many cases by the quintessentially cross-border nature of the climate change problem.

² WHO & UNICEF, *Progress on Drinking Water and Sanitation: 2010 Update* (2010) at pp.6-7, 9, 22 and 31. The estimate of people without access to safe drinking water was provided by Gérard Payen, Chair of UNSGAB Monitoring Group & Chair of WHO/UNICEF Joint Monitoring Programme (JMP) Strategic Advisory Group, on 12 May 2010. For monitoring purposes, the use of improved drinking-water sources has been equated to access to safe drinking-water, but not all improved sources in actual fact provide drinking water that is safe.

³ Bryson Bates, Zbigniew W. Kundzewicz, Shaohong Wu and Jean Palutikof eds., *Climate Change and Water*, Technical Paper VI, International Panel on Climate Change (June 2008) [hereinafter "IPCC Technical Paper VI"] at p. 47.

Nevertheless, whether or not it constitutes a violation in a legal sense, climate change clearly will, and already does, undermine the enjoyment of the rights to water and sanitation by causing floods and droughts, changes in precipitation and temperature extremes that result in water scarcity and increased competition for water resources, disruption to waterborne sanitation systems, contamination of drinking water and exacerbation of the spread of disease. Water scarcity may also result in increasing the cost of water and sanitation provision. The poor, who are among the most vulnerable, are also likely to be affected the most.

All States have formally subscribed to both the United Nations Framework Convention on Climate Change (UNFCCC) and U.N. human rights treaties, and should therefore implement their legal obligations in a coherent manner. However, notwithstanding these facts, water and sanitation have yet to gain any appreciable traction in either international climate change negotiations, mitigation policies or national adaptation plans. Human rights, in all these contexts, have been left out in the cold.

The human rights framework does not pretend to offer a blueprint for the complex trade-offs and policy choices involved with mitigating and adapting to climate change. However the human rights to water and sanitation call attention to the impacts of climate change upon individuals, putting a human face to a problem that might otherwise seem abstract or distant. The human rights framework provides a complementary normative frame of reference as well as clearly defined substantive and process criteria to guide the difficult policy choices to be made in the context of climate change.

The inter-linked and inter-dependent nature of human rights calls for more holistic approaches and inter-sectoral thinking in climate change policy-making. The human rights to health, housing (including secure tenure), and food are foremost among these, along with human rights guarantees for greater transparency, active, free and meaningful participation, and strengthen accountability in climate change decision-making. Climate change, including its projected impacts upon the rights to water and sanitation, should be seen as an integral part of national development and poverty reduction planning processes, for the sake of improved legal and policy coherence.

Improved water resource management should be a central component of climate change adaptation strategies. It will also be a vital consideration for many mitigation activities, including hydropower, agriculture and forestry projects. The importance of water and sanitation for successful climate mitigation and adaptation, and the rights to water and sanitation more specifically, must be properly and adequately reflected within the agreement to be reached by the Conference of the Parties to the UNFCCC (COP 16) in Mexico in December 2010 as well as in processes beyond the COP 16. To this end, this paper provides a range of recommendations to guide negotiators, States and other policy-makers in the climate negotiations and in climate policy more broadly.

Summary of recommendations:

Recommendations specifically for COP 16

The Parties to the UNFCCC and, as appropriate, the UNFCCC and concerned international organisations, should:

1. Recognise the pivotal role of water, including its human rights dimensions, in adapting to climate change in order to increase resilience and achieve sustainable development (*see pages 29-34 of this report*).
2. Recognise the adverse impact of climate change on the enjoyment of human rights, especially the rights to water and sanitation, and ensure that future strategies, plans and policy-making integrate human rights standards and principles (*pages 16-27*).
3. Make information widely available in a range of languages and accessible formats, insofar as the implications of climate change for water and sanitation are concerned, and provide non-technical summaries of key documents as well as descriptions of policy alternatives (*pages 38-40*).
4. Ensure more active, free and meaningful participation in climate negotiations under UNFCCC auspices, with the specific objective of integrating perspectives from the water and sanitation sectors, and human rights perspectives. This should include dedicating technical assistance, on request, to developing country delegations (particularly those of Least Developed Countries and Small Island States) in fields including the water and sanitation sectors, in order that the latter may participate on a more equal footing with other States and more effectively safeguard the human rights to water and sanitation in climate policy (*pages 40-43*).
5. Develop a mechanism within the Nairobi Work Programme (NWP) specifically mandated to bring together experts and implementers on adaptation in the water sector under the NWP. In this regard special attention should be given to safeguarding the human rights to safe drinking water and to sanitation (*pages 31-32*).
6. Integrate a human rights based approach in National Adaptation Plans of Action (NAPAs) (*pages 29-31*), and give special attention to the duty of States to guarantee the human rights to safe drinking water and to sanitation.
7. Integrate NAPAs in the water and sanitation sectors with donor-supported national plans, to the benefit of policy coherence, administrative efficiency, and consistent with aid effectiveness principles (*pages 29-31 and 33*).
8. Strive to include strengthened MRV (measurement, reporting and verification) requirements in negotiations towards a post-Kyoto climate change agreement at COP 16 and beyond, embracing both developed and developing country mitigation actions, and highlighting any mitigation policies or actions with particular implications for the realisation of the human rights to water and sanitation (*pages 27-29 and 40*).

General Recommendations

States and, as appropriate, the UNFCCC and concerned international organisations should:

9. Prioritise access to water for essential personal and domestic purposes and for sanitation (*pages 16-20 and 30 of this report*).
10. Level the playing field in the carbon market to ensure that poorer countries' responsibilities and efforts to realise socio-economic rights, including the rights to

water and sanitation, are not unfairly compromised by their mitigation responsibilities (pages 27-29 & 44-45).

11. Ensure the rights to water and sanitation are protected in all adaptation plans and programmes at global, regional and national levels (pages 24-27 and 29-35).
12. Collect the necessary data on a comprehensive and regular basis to enable adequate monitoring of the quality of water and sanitation in the face of climate change risks. Data should be disaggregated by reference to excluded groups of people and underserved areas, with a particular focus on gender, urban and rural disparities and upper and lower income quintiles, at a minimum, along with the prohibited grounds of discrimination under the international human rights treaties in accordance with national needs and capacities (pages 30 and 40).
13. Ensure that comprehensive and reliable data, as described above, is used to inform climate change policy-making as well as periodic reporting under ratified international human rights treaties, including data on the adequacy, safety, affordability and continuity or regularity of water supply, and the safety, affordability and cultural acceptability of sanitation facilities (pages 17-23 and 40).
14. Ensure resilience of water and sanitation infrastructure as a major climate adaptation measure (pages 21-22).
15. Further explore sanitation technologies which offer alternatives to water-borne sanitation (pages 21-22), and increase commitments to capacity development and technology transfer. Analysis of technology needs in the water and sanitation sectors should take full account of the root causes of lack of access, including barriers related to the structure of the relevant technology markets, the pricing and technology transfer models, as well as political or ideological barriers (pages 35-37).
16. Prioritize climate change interventions to protect or ensure access to safe drinking water and to sanitation for marginalized or discriminated against groups, who risk suffering the most from climate change (pages 24-27).
17. Ensure participation of concerned communities and stakeholders in local and national adaptation efforts (pages 41-43).
18. Build on local and traditional knowledge to increase the likelihood of adaptation measures to ensure adequate access to water and sanitation.
19. Develop and support the functioning of accessible, affordable, timely and effective mechanisms of redress – including judicial, quasi-judicial and administrative mechanisms – to safeguard against violations of the human rights to water and sanitation at the national level arising from climate risks and climate change policy-making (pages 45-49).
20. Strengthen accountability in the formulation and implementation of water and sanitation strategies in the context of national development or poverty reduction plans, with a particular focus on the impacts of climate change (page 48).
21. Integrate the human rights to water and sanitation within environmental impact assessments (EIAs), to enable *ex ante* and *ex post* assessments of any significant climate change mitigation or adaptation policy measures on the rights to water and sanitation (pages 44-45).
22. Give further dedicated attention to the study and support of environmental litigation at the national and regional levels insofar as the impacts of climate change upon human rights (including the rights to water and sanitation) are concerned, along with innovations and good practices in connection with administrative mechanisms and National Human Rights Institutions (pages 45-49).
23. With diffuse and vulnerable victims, international and domestic courts and tribunals should adopt flexible standing rules and a broad interpretation of “interest” when harmful impacts of climate change upon humans are challenged (pages 47-48).

24. Ensure adequate and flexible financing mechanisms to speed up investment in water management in developing countries, with a particular focus on the most vulnerable communities, in conformity with human rights (*pages 33-35*).
25. Devote additional funding to development and support of adaptive strategies for vulnerable groups and ecosystems. These resources should be additional to existing official development assistance (ODA) commitments (*pages 33-35*).
26. Ensure that ODA is allocated and used in ways that are fully consistent with human rights principles and standards, including the rights to water and sanitation, and ensure that ODA supports efforts to identify and address human rights violations and discrimination, including gender discrimination and inequality. Donor states should ensure that water and sanitation, and in particular basic water and sanitation, are given greater priority as a percentage of ODA, with proportionately greater allocations to Least Developed Countries. Within the framework of progressive realisation towards the goal of universal access, donor and partner countries should prioritise the fulfilment of States' minimum core obligations with particular regard to the most marginalised communities and populations. They should also ensure that there is full transparency and access to information on the use of ODA and full and meaningful participation of all relevant stakeholders, including affected communities, in the use of ODA (*pages 33-35*).
27. Manage the unpredictable: as countries start developing systems to manage uncertainties and increasing risks, ensuring availability, access and quality of drinking water and sanitation should be considered as crucial components of risk management.
28. Promote a human rights based approach to Integrated Water Resources Management, emphasizing participation, non-discrimination, and accountability (*page 32*).
29. Adhere to both the International Covenant on Economic, Social and Cultural Rights (ICESCR) and its Optional Protocol, and recognize the competence of the CESCR to receive and consider inter-State communications and to undertake inquiries as a critical safeguard and complement to municipal legal protections and national and regional accountability systems, insofar as climate change risks to the rights to water and sanitation are concerned (*page 49*).
30. Adhere to and implement in good faith the provisions of the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, and undertake greater efforts to apply the Almaty Principles on Promoting the Application of the Principles of the Aarhus Convention in International Forums (*pages 39 and 49*).
31. Encourage greater awareness of the links between climate change, human rights, water and sanitation issues, and foster more extensive inter-action between their respective constituencies and professional communities (*pages 49-50*).
32. Encourage greater awareness of possible tensions between legal regimes governing climate change, human rights, trade and intellectual property, and encourage and fund research to address these (*pages 49-50*).
33. Foster inter-Ministerial and inter-departmental consultation and coordination mechanisms necessary to ensure greater policy coherence, insofar as climate change, water, sanitation and human rights policy-making are concerned. Governments of wealthier countries should commit to helping build the requisite research and technical capacities of developing country bureaucracies, in these respects (*pages 49-50*).

Special Procedures of the U.N. Human Rights Council should:

34. More actively take up the question of climate change within the scope of their mandates, depending upon the directness of the bearing of climate change to those mandated concerns (*pages 46 and 48*).

Member States of the U.N. Human Rights Council should:

35. Revise the reporting guidelines for the Universal Periodic Review (UPR) process to ensure that national reports address threats to the human rights to water and sanitation linked to climate change (*pages 46 and 48*).

Human rights treaty bodies should:

36. More regularly request information from States parties on how human rights (including the human rights to water and sanitation) may be impacted within the framework of national mitigation and adaptation policies and programmes (*page 48*).

Human rights treaty bodies, Special Procedures, and courts, tribunals and dispute resolution bodies dealing with human rights, climate change, trade and intellectual property issues (including under the auspices of the World Trade Organisation) should:

37. Approach their functions with a fuller appreciation of the substantive linkages between the specialised legal regimes governing climate change, human rights, trade and intellectual property, to ensure that international law evolves in a coherent fashion and that States parties to the various treaty regimes are able – assuming the requisite political will to do so – to give effect to a mutually compatible overall set of international obligations (*pages 49-50*).

A. Introduction

The relationship between climate change and human rights is far from self-evident. While it is clear that climate change is already impacting negatively on lives, livelihoods and the availability and quality of water and sanitation services, these impacts do not necessarily translate to violations of duties under international human rights law. Climate change is a quintessentially global problem, involving complex scientific projections. Causation, attribution and apportionment of responsibility for harms can be notoriously difficult to determine in these circumstances.

Moreover, climate change and human rights are governed by separate international legal regimes, the subject of a burgeoning academic literature but comparatively little cross-fertilisation in practice. There is presently no internationally recognised human right to an environment or climatic conditions of a particular quality, although this varies considerably under regional and national human rights laws. More significantly still, perhaps, climate change and human rights policy-making have distinctive institutional settings and constituencies at both international and national levels. The former is typically the domain of natural scientists and economists, and the latter has so far been dominated by lawyers and political scientists. Hence, any attempt to reconcile the climate change and human rights regimes inevitably runs into a series of thorny empirical, normative and institutional questions at the outset.

This paper seeks to unpack these challenging premises as the basis for a set of conclusions and forward-looking recommendations on how to promote greater legal and policy coherence in the human rights and climate change fields. The paper begins by examining the relationship between the international legal regimes governing climate change and the human rights to water and sanitation, focusing in a schematic fashion upon the contours and content of the legal obligations relating to each. Drawing from this analysis and recent findings in the empirical literature, Part C discusses the various respects in which the human rights to water and sanitation may be undermined by climate change, whether or not this also may constitute a legal violation. Part D then outlines a range of priorities and possibly entry points for strengthening legal and policy coherence in climate change and human rights negotiations and policy-making, with a focus on water and sanitation. Conclusions and key recommendations are summarised in Part E.

B. Legal obligations applicable to the human rights to water and sanitation, and to climate change

Water and sanitation are explicitly referred to in a number of international human rights treaties, namely those dealing with women's and children's rights, along with a number of political declarations.⁴ The right to water is implicit in Article 11 of the International Covenant on Economic, Social and Cultural Rights (ICESCR),⁵ as interpreted by the Committee on Economic, Social and Cultural Rights (CESCR), which defines the right to

⁴ U.N. Doc A/HRC/6/4 (July 5, 2007), pages 6-9.

⁵ International Covenant on Economic, Social and Cultural Rights, 6 I.L.M. 368 (1967).

water as “the right of everyone to sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses.”⁶

Although sanitation has received less attention than water in the international human rights discourse to date, human rights obligations related to access to sanitation are now internationally recognised and accepted.⁷ In the opinion of the U.N. Independent Expert on human rights obligations concerning water and sanitation, sanitation is a universal prerequisite for human dignity.⁸ Sanitation can be understood as a system for the collection, transport, treatment and disposal or re-use of human excreta and associated hygiene. States must ensure in a non-discriminatory manner that everyone has access to sanitation in all spheres of life that is safe, hygienic, secure, socially and culturally acceptable, provides privacy and ensures dignity.⁹

Hence, as with other economic, social and cultural rights, the normative content of States’ obligations relating to access both to water and to sanitation can be seen in terms of criteria such as availability (referring to sufficient water for personal and domestic use, or sufficient sanitation facilities), quality (including safety of water and sanitation facilities), accessibility, affordability, and acceptability (including cultural acceptability). These criteria are taken as the framework for analysis of climate change impacts upon the human rights to water and sanitation in Part C below, and should be on the checklist of all climate change negotiators’ and policy-makers’ concerns.

Obligations to “respect, protect and fulfil”

A certain typology of obligations has emerged under international human rights law, and the jurisprudence of the CESCR and Special Procedures of the U.N. Human Rights Council dealing with economic, social and cultural rights mandates. The discussion in this section will focus principally upon obligations relating to socio-economic rights embodied in the ICESCR and U.N. Convention on the Rights of the Child (CRC).¹⁰ These obligations, along with the normative criteria outlined in the preceding section, should play a more prominent role in the framework for climate change policy-making, bearing in mind the universal adherence of U.N. Member States to the UNFCCC and their near-universal adherence to human rights treaties safeguarding socio-economic rights.¹¹

States are obliged under the ICESCR to “respect” human rights, that is to say, to refrain from interfering with the enjoyment of a right, for example, refraining from arbitrary disconnections of water services or removal of sanitation facilities; to “protect” human rights, meaning preventing third parties from interfering with human rights which includes regulating private providers of water and sanitation services and ensuring that there are effective judicial and other redress mechanisms for any violations; and “fulfil” human rights by adopting necessary policy, financial and institutional measures for their realisation. It is also commonly accepted that all human rights entail negative as well as positive obligations, i.e. duties to act and to abstain.

⁶ CESCR, General Comment No. 15: The Right to Water, E/C.12/2002/11 (2003) [*hereinafter* “General Comment 15”].

⁷ U.N. Doc. A/HRC/RES/12/8 (12 October 2009).

⁸ U.N. Doc. A/HRC/12/24 paras 55-59.

⁹ *Id.* Para 63.

¹⁰ Convention on the Rights of the Child, Nov. 20, 1989, 28 I.L.M. 1448.

¹¹ The ICESCR has 160 States parties, and all but two U.N. member States – the U.S.A. and Somalia – are party to the CRC, a broad-ranging treaty containing human rights guarantees of all kinds.

States parties to the ICESCR are under a number of immediate obligations such as the duty to take immediate, “concrete, targeted and effective” steps towards the full realisation of human rights, to monitor the progressive realisation of socio-economic rights, and not to discriminate between different groups of people in terms of the laws, plans, policies and resources committed to the realisation of the various rights.¹² Subject to these and certain other immediate duties, human rights law obliges States to progressively realize access to water and sanitation to the *maximum of their available resources*. States are required to move towards the goal of full realization *as expeditiously and effectively as possible*, within available resources and within the framework of international cooperation and assistance, where needed. States should provide timely, accessible and effective remedies for violations. Any deliberate retrogression in the realisation of a given right must be strongly justified.¹³ States must also ensure that the most basic needs of the poorest, most vulnerable and marginalized groups of people should be a priority in national planning.¹⁴ The Committee on the Rights of the Child (the expert body overseeing the implementation of the CRC) interprets socio-economic rights obligations in a very similar way.¹⁵ The views of human rights treaty bodies are not legally binding, but can be taken as authoritative interpretations of the meaning of treaty provisions.

Indivisibility, inter-relatedness and inter-dependence of human rights

Water and sanitation cannot be analysed in isolation from other human rights. Both may be impacted by violations of other rights, and both are indispensable for the realisation of the rights to life, health, housing and education, among others. For example, water collection and lack of adequate or appropriate sanitation facilities keep girls out of school, and access to clean water and sanitation can reduce the risk of child mortality by as much as fifty percent.¹⁶ The absence of clean water and sanitation is a major cause of poverty and malnutrition, and water insecurity linked to climate change may increase malnutrition by 75-125 million people by 2080.¹⁷ Rapidly growing urbanization combined with increasing demand for freshwater

¹² The non-discrimination requirement should not be read as prohibiting differential treatment between groups of people, however as long as any distinctions are objectively justifiable. Moreover, temporary special measures in favour of women, minorities, people with disabilities, and disadvantaged groups are lawful under relevant international human rights instruments.

¹³ CESCR General Comment No. 3: The Nature of State Parties Obligations, E/C.3/1991/3 (1990) [*hereinafter* CESCR, General Comment 3].

¹⁴ Under the Committee’s jurisprudence, the obligation to guarantee “essential minimum levels” and avoid retrogression in the realisation of socio-economic rights are qualified by resource availability: see CESCR General Comment No. 3. The Committee has also indicated that evidence of discrimination, and whether public policy choices are giving sufficient priority to the most vulnerable populations, will be among the relevant factors it will take into account in reviewing the “adequacy” or “reasonableness” of steps taken by States Parties under article 2(1) of the ICESCR, when reviewing communications under the recently concluded Optional Protocol. See CESCR, “An Evaluation of the Obligation to Take Steps to the ‘Maximum of Available Resources’ under an Optional Protocol to the Covenant,” Statement, U.N. Doc. E/C.12/2007/1 (May 10, 2007) at para. 8(b), (d) & (f).

¹⁵ Article 4 of the CRC provides that States Parties realise economic, social and cultural rights to the “maximum extent of available resources.” See Committee on the Rights of the Child, “Day of General Discussion – Resources on the Rights of the Child: Responsibilities of States,” Oct. 5, 2007, paras. 47-49, available at <http://www2.ohchr.org/english/bodies/crc/discussion2008.htm> [*hereinafter* “CRC Discussion Day on Resources”].

¹⁶ UNDP, *Human Development Report 2006: Beyond Scarcity: Power, Poverty and the Global Water Crisis* (2006) [*hereinafter* HDR 2006], p.22-23; and see United Nations, *World Water Development Report 2009* [*hereinafter* UNWDR 2009] at 8.

¹⁷ UNDP, *Id.* at 24. The poorest households pay up to ten times more for water than wealthy households. Water is a vital productive input for smallholder farmers, and mounting pressure to reallocate water from agricultural to

and insufficient sanitation infrastructure, accentuated by climate change, poses threats to public health and increases the prevalence of water-borne diseases. For example, endemic morbidity and mortality due to diarrhoeal disease associated with floods and droughts are expected to rise in East, South and South-East Asia due to projected changes in the hydrological cycle.¹⁸ These empirical links are reflected in the normative content of particular rights. For instance, the underlying determinants of the right to health under Article 12 of the ICESCR specifically include “access to safe and potable water and sanitation,” and the CESCR has recognised habitability and access to services and infrastructure (including, by implication, water and sanitation services) as part of the right to adequate housing.¹⁹

Civil and political rights are intimately related with economic, social and cultural rights in both theory and practice. It is strongly arguable that life-threatening deprivation of access to water or unsafe sanitation facilities may in many circumstances constitute a violation of the right to life under Article 6 of the ICCPR²⁰ and the freedom from torture, cruel and other inhuman or degrading treatment or punishment under Article 7 of the ICCPR.²¹ Moreover it is impossible for individuals to effectively claim their human rights and demand improved performance from duty-bearers in a climate of political repression. Active, free and meaningful participation in climate decision-making requires, among other things, timely access to adequate information in accessible languages and formats, the freedom to organise and express one’s views, and timely, effective and accessible mechanisms of redress when rights are violated.

The foregoing discussion illustrates what is meant when lawyers speak of the “indivisibility, inter-relatedness and inter-dependence” of human rights: when climate change undermines one human right, it may effectively undermine many. Correspondingly, the realisation of particular human rights (and the rights to water and sanitation are good examples of this) may have beneficial spin-offs for others. A holistic and cross-sectoral perspective is required in order to anticipate both negative and positive human rights implications of climate change mitigation and adaptation actions, and establish necessary human rights preconditions for climate change decision-making processes.

Obligations concerning international assistance and cooperation

Human rights treaties were principally intended to regulate the conduct of States *vis-à-vis* their own populations. This is among the key difference and possible tensions between human rights treaties and the UNFCCC regime. Yet, there are a number of respects in which

industrial uses may worsen rural poverty further. To similar effect see U.N. Millennium Project Task Force on Water and Sanitation, *Health, Dignity and Development: What Will It Take?* (London: Earthscan, 2005) at page 17, noting also that healthy people are better able to absorb the nutrients in food than those suffering from water-related diseases, particularly worms, which rob their hosts of calories.

¹⁸ Solomon, S.; Qin, D.; Manning, M.; Chen, Z.; Marquis, M.; Averyt, K.B.; Tignor, M.; Miller, H.L. eds., *Climate Change: The Physical Science Basis*, Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), p. 996.

¹⁹ CESCR, General Comment No. 15, *above* note 6, at para. 3; Article 12 ICESCR; CESCR, General Comment No. 14, *The right to the highest attainable standard of health*, E/C.12/2000/4 (2000), para. 11; CESCR, General Comment No. 4, *The Right to Adequate Housing*, E/1992/23 (1991); and CESCR, General Comment No. 7 (1997) on the right to adequate housing (Article 11(1) of the Covenant): Forced evictions.

²⁰ Report of the Independent Expert on the issue of human rights obligations related to access to safe drinking water and sanitation, Ms. Catarina de Albuquerque, A/HRC/12/24 (Jul. 1, 2009), paras. 41-2.

²¹ Human Rights Committee, General Comment No. 6, Article 6: The right to life (Sixteenth session, Apr. 30, 1982), at para. 5. Report of the Independent Expert on the issue of human rights obligations related to access to safe drinking water and sanitation, Ms. Catarina de Albuquerque, Mission to Costa Rica, A/HRC/12/24/Add.1 (June 23, 2009) at para.9.

international human rights law, properly interpreted, does support trans-boundary obligations of abstention, cooperation, and to some extent even positive assistance. In legal jargon, these are known as “extra-territorial” obligations. The constraints of space preclude detailed treatment of this important topic here, hence it will suffice to set out the essential principles in schematic form, while highlighting issues of particular contention and ongoing debate.

While States have the primary legal obligations for the realisation of human rights domestically, the UN Charter commits the international community to cooperate for the realisation of, *inter alia*, internationally recognised human rights.²² Article 28 of the UDHR states that: “[e]veryone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully utilised.” Article 22 of the UDHR proclaims that economic, social and cultural rights should be realised “through national effort and international cooperation.”

Subsequent human rights treaties reinforce and flesh out these principles. Article 2(1) of the ICESCR is of particular note in this respect, providing relevantly that: “Each State Party to the present Covenant undertakes to take steps, *individually and through international assistance and co-operation*, especially economic and technical, to the maximum of its available resources, with a view to achieving progressively the full realization of the rights recognized in the present Covenant by all appropriate means...” Article 2(1) was not, as a general matter, intended to provide a basis for wealthier countries to be held accountable for the failure of other states to protect human rights which the latter blamed on lack of international assistance.²³ No State or group of States has accepted the proposition that Article 2(1) and accompanying provisions require any given State to provide particular assistance to any other. Nevertheless, subject to this caveat, the CESCR has identified a number of obligations with extra-territorial effect, based upon Articles 2(1), 11, 15(4), 22 and 23 of the Covenant.²⁴

Under the CESCR’s interpretation, article 2(1) and accompanying substantive provisions of the ICESCR require that an undifferentiated collectivity of countries which are “in a position to assist” should take concrete steps towards the 0.7%/GNP target for ODA for “developing countries”, and establish a specific timetable to that end. Further criteria are specified in connection with disaster relief and humanitarian emergencies, where the CESCR argues that States have a “joint and individual responsibility” to the “maximum of their capacities” to provide certain essential supplies and financial support, with priority for the most vulnerable groups.²⁵ Wealthier countries’ obligations are to be exercised directly as well as through

²² See United Nations Charter, arts. 1, 55 & 56.

²³ See CRAVEN, MATHEW R., *THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS: A PERSPECTIVE ON ITS DEVELOPMENT* (1995); Vandenhoe, Wouter, *EU and Development: Extraterritorial Obligations under the International Covenant on Economic, Social and Cultural Rights*, in *CASTING THE NET WIDER: HUMAN RIGHTS, DEVELOPMENT AND NEW DUTY-BEARERS* 85, 97 (Margot E. Salomon et al., eds., 2007).

²⁴ Under article 11(2) States Parties, “recognizing the right of everyone to be free from hunger, shall take, individually and through international cooperation, the measures, including specific programmes, which are needed[.]” Under article 15(4) States Parties “recognize the benefits” of international cooperation in the scientific and cultural fields. Article 22 entitles the U.N. Economic and Social Council to notify specialized agencies and other organs of the U.N. of international technical assistance needs “likely to contribute to the effective progressive implementation of the Covenant.” Finally, article 23 provides: “The States parties to the present Covenant agree that international action for the achievement of the rights recognized in the present Covenant includes such methods as the conclusion of conventions, the adoption of recommendations, the furnishing of technical assistance and the holding of regional meetings and technical meetings for the purpose of consultation and study organized in conjunction with the Governments concerned.”

²⁵ CESCR, General Comments No. 12 (para. 38), 14 (para. 40) and 15 (para. 34)..

international organisations of which they are members, although the latter organisations are generally considered to have legal obligations referable to the Covenant as well.²⁶ “Developing countries,” in turn, are subject to a number of corresponding obligations including a requirement to “actively seek assistance” where needed, to identify technical cooperation needs, to ensure that assistance programmes are monitored, to refrain from obstructing access of those seeking to offer assistance, and to ensure that assistance prioritises “minimum core” entitlements and the rights of the most vulnerable and marginalised groups.²⁷

In the case of the right to water, for example, obligations identified by the CESCR include the requirement to respect the enjoyment of the right to water in other countries (e.g. avoiding actions that may prevent another state party from discharging its own obligations under the Covenant, and refraining from embargoes affecting the supply of water), to protect that right (e.g. preventing their own citizens and companies from violating the right to water of individuals and communities in other countries, for example in the context of private sector participation and user fees policies), to facilitate access to water, to provide the necessary aid when required, and to ensure that the right is given due attention in international aid agreements.²⁸ The CESCR has purported to give effect to its views on extra-territorial obligations in reviewing the periodic reports of donor countries, for example by encouraging the latter to do all they can to ensure that the policies and decisions of the international financial institutions are consistent with states parties’ obligations under the Covenant.²⁹

Certain other treaty bodies and Special Procedures have adopted similar interpretations of extra-territorial obligations relating to socio-economic rights. For example Article 4 of the CRC commits states to fulfilling socio-economic rights “to the maximum extent of available resources and, where needed, within the framework of international cooperation.” International cooperation is highlighted in order to “achieve progressively the full realization” of the rights to health and education, paying particular attention to the “needs of developing countries.”³⁰ The Committee on the Rights of the Child has frequently investigated this issue in its review of states’ periodic reports and, on occasion, has recommended that wealthier countries increase international assistance and use the CRC as a framework in that regard.³¹ The Convention on the Rights of Persons With Disabilities (CRPD) probably establishes the high-water mark in this respect. Article 32 of the CRPD calls for making general development activities more disability-inclusive, with emphasis on capacity-building, cooperation in research and technology transfer, and economic assistance as appropriate.³² An explicit focus

²⁶ For fuller discussion of the latter issue see MAC DARROW, *BETWEEN LIGHT AND SHADOW: THE WORLD BANK, THE INTERNATIONAL MONETARY FUND, AND INTERNATIONAL HUMAN RIGHTS LAW* (2003).

²⁷ Magdalena Sepúlveda, *Obligations of “International Assistance and Cooperation” in an Optional Protocol to the International Covenant on Economic, Social and Cultural Rights*, 24(2) NETH. HUM. RTS. Q. 271, 290-2 (2006), citing the Committee’s concluding observations for Sri Lanka, Jamaica, Ukraine, Moldova, El Salvador and Mexico, among others. On the burden of proof of countries claiming international assistance see CRC Discussion Day on Resources, *above* note 15, para. 51.

²⁸ CESCR, General Comment No. 15, at paras. 30-36.

²⁹ See e.g. Concluding Observations Japan, UN Doc. E/C.12/1Add. 67, para. 37; Concluding Observations United Kingdom, UN Doc. E/C.12/1Add. 79, para. 26; Concluding Observations Italy, UN Doc. E/2001/22, para. 126; and Concluding Observations Belgium, UN Doc. E/2001/22, para. 493.

³⁰ CRC, article 24(4).

³¹ See e.g. Concluding Observations Australia, U.N. Doc. CRC/C/15/Add.79, para. 25, discussed in Sepúlveda, *above* note 27 at 276. This strategy has not met significant objections from the donor states concerned. See International Council on Human Rights Policy, *Duties Sans Frontières: Human Rights and Global Social Justice* (2003) at 29. See also CRC Discussion Day on Resources, *above* note 15. Special Rapporteurs on the rights to education, food and health, and the Independent Expert on human rights obligations relating to water and sanitation, have adopted similar interpretations.

³² Convention on the Rights of Persons with Disabilities, Dec. 13, 2006, U.N. Doc. A/RES/63/192, Article 32.

on international development cooperation seems particularly important in the case of the CRPD given that over eighty percent of persons with disabilities live in developing countries, and disability is closely correlated with poverty worldwide.³³

In conclusion, international human rights law shows a clear and consistent trend towards the recognition of the importance of extra-territorial obligations in relation to socio-economic rights, where a claimant state has demonstrated that its inability to realise a particular right is due to lack of sufficient resources, and that maximum efforts had been undertaken (without success) to realise the right. While many donor countries continue to question the concept of legally binding obligations of cooperation or assistance beyond their own borders, treaties such as the ICESCR, CRC and CRPD, along with global summit agreements on issues such as aid and trade, help us to interpret the U.N. Charter obligations of international cooperation in line with contemporary expectations and norms. International support is stronger, although not unambiguously so, for extra-territorial obligations to “respect” human rights in third countries, and to some extent to “protect,” as distinct from “fulfil.” Yet, existing human rights law and jurisprudence fall well short of differentiated determinations of responsibility as between donor and recipient countries. Neither have international human rights bodies yet made much headway into assessing the adequacy of a given state’s fiscal and other efforts to realise socio-economic rights within its overall resource envelope, although as at 2010 there were some nascent moves in this direction.³⁴ The lack of adequate enforcement mechanisms can also make such duties appear hollow in practice.

Legal obligations of States under the climate change regime

The UNFCCC and Kyoto Protocol³⁵ are the legislative centrepieces of the international community’s attempt to address the climate change problem. These instruments set in place a framework of common but differentiated responsibilities for GHG emissions reductions (‘mitigation’), as well as support for national level measures to respond to extant or imminent climate change harms (‘adaptation’, which includes social protection, disaster risk reduction, and natural resource management). The Kyoto Protocol, which has been ratified by 187 states (the UNFCCC enjoys universal adherence), sets binding emissions limits for certain industrialised countries (called ‘Annex 1’ countries) between 2008-2012. These agreements embody a distinctive scheme of differentiated obligations and reciprocity between States,³⁶ as distinct from the international human rights framework which essentially regulates relations between individual states and their own inhabitants. Article 4(1)(e) of the UNFCCC sets forth the commitment of states parties to “[c]ooperate in preparing for adaptation to the impacts of climate change; develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture, and for the protection and rehabilitation of areas, particularly in Africa, affected by drought and desertification, as well as floods.” States

³³ HuriTalk Insight Series No. 1, Interview with Simon Walker, OHCHR, at <http://hrbportal.org/insight/?p=3>.

³⁴ For an outline of initiatives concerning quantitative assessment and measurement of fiscal and policy effort for the realisation of ESCR, see e.g. Edward Anderson & Marta Foresti, *Assessing Compliance: the Challenge for Economic and Social Rights*, 1(3) OXFORD J. HUM. RTS. PRAC. (Sept. 11, 2009).

³⁵ Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 11, 1997, 37 I.L.M. 22.

³⁶ Reciprocity, or the conditional nature of the performance of treaty obligations, is enshrined explicitly in article 7 of the UNFCCC: “The extent to which developing country Parties will effectively implement their commitments under the Convention will depend on the effective implementation by developed country Parties of their commitments under the Convention related to financial resources and transfer of technology and will take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.” Human rights treaty obligations do not depend upon how other States discharge their own commitments.

must furnish specific information on emissions and emission reduction measures, and the Kyoto Protocol provides a range of mechanisms to facilitate this, namely a “joint implementation mechanism,” an international emissions trading system, and the so-called Clean Development Mechanism (CDM).³⁷

The UNFCCC and the Kyoto Protocol do not deal directly with the human implications of climate change. However, subsequent agreements have called for consideration of the social and economic consequences of response measures as well as enhanced international cooperation.³⁸ Notably, at the Thirteenth Session of the Conference of the Parties to the UNFCCC, the Bali Action Plan was adopted “to launch a comprehensive process to enable the full, effective and sustained implementation of the Convention through long-term cooperative action...”³⁹ A number of international funds have been established to support national adaptation in developing countries. In 2001, the UNFCCC secretariat initiated a “National Adaptation Programme of Action” (NAPA) process, under which Least Developed Countries (LDCs) may identify priority activities that respond to their urgent and immediate needs to adapt to climate change (those for which further delay would increase vulnerability or costs at a later stage) as a tool for international resource mobilisation.⁴⁰ Moreover, a five-year programme of work (Nairobi Programme of Work, 2005-2010) was put in place by States parties, international organisations, and other stakeholders to help all States parties, and, in particular, LDCs and low-lying countries, improve their understanding and assessment of impacts, vulnerability, and adaptation to climate change as a basis for informed decision-making on climate change adaptation.⁴¹

All countries have subscribed to at least one (and frequently several) of the core nine UN human rights treaties,⁴² as well as the UNFCCC (and in almost all cases, the Kyoto Protocol). States are therefore required to give effect to these agreements in a manner that ensures a single set of compatible obligations.⁴³ Yet these are very different kinds of agreements, emerging through separate negotiation processes and institutional settings, regulating very different subject matter. Unlike the international human rights regime, the UNFCCC and the Kyoto Protocol do not contemplate entitlements for individuals or communities directly, in human rights terms or otherwise, nor do they call for remedial measures in the event of an environmental disruption. The relatively strong commitments to international cooperation and clear differentiation of responsibilities for mitigation and adaptation in the climate regime emerge from a widely shared appreciation of climate change as a quintessentially global problem, to which industrialised countries’ historical GHG emissions have disproportionately contributed. Differentiation of legal responsibility to this degree would be inappropriate in the

³⁷ See Kyoto Protocol, Articles 6, 7, and 12 respectively. Under the CDM, States can receive additional emission credits if they set up schemes to combat climate change in developing countries.

³⁸ United Nations Climate Change Conference, Dec. 3-15, 2007, *Report of the Conference of the Parties on its Thirteenth Session*, U.N. Doc FCCC/CP/2007/6/Add.1 (Mar. 15, 2008).

³⁹ See Decision 1/CP.13, *Bali Action Plan*, in United Nations Climate Change Conference, Dec. 3-15, 2007, *Report of the Conference of the Parties on its Thirteenth Session*, U.N. Doc FCCC/CP/2007/6/Add.1 (Mar. 15, 2008). There is no agreement as yet on the legal form of this “agreed outcome,” but it is widely expected to lead to a new climate agreement either to supplement or replace the Kyoto Protocol.

⁴⁰ On NAPAs see

http://unfccc.int/cooperation_support/least_developed_countries_portal/frequently_asked_questions/items/4743txt.php.

⁴¹ Decision 2/CP.11, U.N. Doc. FCCC/CP/2005/5/Add.1 at 5. Further information on the Nairobi Programme of Work available at http://unfccc.int/adaptation/sbsta_agenda_item_adaptation/items/3633.php.

⁴² For a list of the core conventions see www.ohchr.org.

⁴³ International Law Commission, *Fragmentation of International Law: Difficulties Arising from Diversification and Expansion of International Law: Report of the Study group of the International Law Commission*, U.N. Doc. A/CN.4/L.682 (Apr. 13, 2006), 1-25, para.154.

human rights regime, where the dominant assumption is that individuals' life chances and well-being are still overwhelmingly dependent upon the behaviour of the territorial state.

Compatibility between the human rights and climate change legal regimes

The foregoing outline of the human rights and climate change regimes, while necessarily schematic in nature, suggests that while there appears to be nothing inherently contradictory between these two regimes, there are evident tensions that nevertheless need to be worked out. The two regimes establish regulatory frameworks to address problems of common concern to the international community. However the climate change regime embodies more of a classical contract between States under international law founded upon principles of reciprocity, as distinct from international human rights law the principal concern of which is how States treat their own populations. Differences in the subject matter of these regimes, the nature and differentiation of legal obligations, their different (and unsettled) approaches to extra-territorial duties, and their different approaches to encouraging compliance, need to be resolved by States through interpretation in good faith.

It is impossible to identify and resolve all tensions in the abstract within a paper of the present scope. However the distinctive legal and institutional attributes of the climate change and human rights regimes are revisited in Part D, suggesting how potential tensions may be anticipated and resolved and how synergies between the two regimes may most fruitfully be exploited, with a focus on the human rights to water and sanitation.

C. Adverse impacts of climate change on the human rights to water and sanitation

The fact of anthropogenic (i.e. caused or produced by humans) climate change is no longer in dispute in the peer-reviewed scientific literature. It is also clear that the main impacts of climate change on human beings and the environment occur through water. While climate change will create important pressures on water, however, it is not considered to be the most influential driver of these pressures beyond the water sector. In the assessment of the U.N., the most important drivers – forces and processes generated by human activities – are demographic changes and the increasing consumption that come with rising per capita incomes. Therefore, for present purposes, the impacts of climate change need to be seen in light of its direct effects on water resources as well as its indirect influence on other external drivers of change.⁴⁴

Climate change adds pressure to existing threats to the sustainability of freshwater resources; population growth, socio-economic and technological changes and the resulting rising demand for water. There is considerable variation among the predictions and scenarios concerning the impact of climate change on water resources. However it is clear that climate change will increase water stress in already dry areas, and will undermine water quality in areas flooded either by rain or by sea water. Areas particularly sensitive to climate change are coastal zones and cities, estuaries and deltas, watersheds, mountains, small islands and arid regions. Urgent action is needed to adapt water management particularly in these regions to ensure safe freshwater availability in the future.

Climate change involves changes in the frequency and magnitude of extreme weather events. According to the United Nations International Strategy for Disaster Reduction (UNISDR),

⁴⁴ UNWWDR 2009 at 14, and Chapters 2 & 5 esp. pp.68-76.

climate change is already changing the geographic distribution, frequency and intensity of weather-related hazards and threatens to undermine the resilience of poorer countries and their citizens to absorb loss and recover from disaster impacts. This combination of increasing hazard and decreasing resilience makes climate change a global driver of disaster risk.⁴⁵

There is a rich literature on climate change and water, but comparatively little analysis directed to sanitation more specifically. This partly reflects the indirect nature of many of the foreseeable impacts of climate change upon waterborne sanitation systems, occurring through stresses or disruptions to water systems and infrastructure (as opposed to dry sanitation which is more climate resilient). It may also reflect the comparative neglect of sanitation in public policy-making more generally. The approach taken by this paper is to describe climate change impacts upon water and sanitation in an integrated fashion. This approach has the advantages of succinctness and avoidance of repetition, acknowledging the closely inter-related drivers of climate-related changes in these two “sectors,” along with the inter-dependence and inter-relatedness of human rights in theory and practice. This should not, however, be taken as diminishing the importance of sanitation, and more particularly the human right to sanitation, in its own right.

The assessment of climate impacts below is structured in accordance with the criteria for the normative content of each right as described earlier, namely: availability, accessibility, acceptability and quality. This approach is justified by analytical convenience, and as will be seen in the discussion, shouldn’t be taken as denying some degree of overlap between these normative criteria in practice. The structure of this inquiry is separate from the question of legal responsibility for a human rights violation which would call for more complex case-specific inquiries.

Availability of water and sanitation

As indicated at the outset, the human right to water is defined as “the right of everyone to *sufficient, safe, acceptable, physically accessible and affordable water for personal and domestic uses*” [emphasis added]. Personal uses “ordinarily include drinking, personal sanitation, washing of clothes, food preparation, personal and household hygiene.”⁴⁶ In the view of the Independent Expert on human rights obligations relating to water and sanitation, “availability” of sanitation facilities means a “sufficient number of sanitation facilities to ensure that waiting times are not unreasonably long.”⁴⁷

Human rights law avoids any prescriptive or categorical stipulation about what constitutes “sufficient” sanitation facilities, or a “sufficient” amount of water for personal and domestic usage. Context-specific assessments of water and sanitation should be carried out in a participatory and non-discriminatory fashion. However in the case of the right to water, General Comment 15 does venture some guidance: “The amount of water made available should conform to World Health Organisation (WHO) guidelines. Some individuals or groups may require additional amounts due to health, climate or work conditions”.⁴⁸ The WHO research, as referenced in General Comment 15, suggests a minimum of 20 litres per person per day, but it notes that at this level of availability, there is a medium health risk as not all requirements may be met. The WHO standard also acknowledges that in relation to physical

⁴⁵ Global Assessment Report on Disaster Risk Reduction (2009): Risk and poverty in a changing climate. Invest today for a safer tomorrow, p. 4.

⁴⁶ CESCR, General Comment 15, *above* note 6 at para. 12(a), (emphasis added).

⁴⁷ U.N. Doc. A/HRC/12/24 (2009), *above* note 20 at paras. 70-71.

⁴⁸ *Id.*, para. 12(a), with reference to footnote 14.

access, where a water source is over 100m away from a household, or where collection time is between 5-30 minutes (including time spent queuing for water), it is unlikely that collection of water will exceed 20 litres per person per day.⁴⁹ In terms of quantity of water with a low health risk, General Comment 15 refers to a further WHO study which sets a higher threshold of above 50 litres of water per person per day, with a yard or house tap, over and above water-borne sanitation needs. Again, the CESCR did not intend this figure as an absolute standard or as a substitute for case-by-case assessments, taking into account legitimate variations in climate, health, working conditions and other relevant factors.

The overall availability of water will be seriously impacted by climate change mainly through drought, the decline in water supplies stored in glaciers and snow cover, and flooding. Increased water scarcity (commonly defined as the condition in which the annual availability of renewable fresh water is 1,000 cubic metres or less per person)⁵⁰ will result in increased competition between sectors such as domestic, agricultural and industrial water use. Groundwater levels of many aquifers around the world are in decline due to groundwater pumping surpassing groundwater recharge rates.⁵¹ Drinking water availability will decrease due to a worsening of water quality in the course of water pollution and salinization. In turn, waterborne sanitation will be adversely affected by the increased scarcity of water.

Areas that are already relatively dry, such as the Middle East and North Africa and parts of Southern Africa, South and Central Asia and South America, are likely to experience further decreases in water availability, for example several climate models predict up to 30% decrease in annual runoff in these regions for a 2°C global temperature rise (Figure 3.2) and 40 – 50% for 4°C.⁵² In Africa, there will be increasing water stress for many countries and 75–220 million people face more severe water shortages by 2020. In Asia over a hundred million people will suffer increasing water stress due to decreases of freshwater availability in Central, South, East and Southeast Asia, particularly in large river basins such as Changjiang.⁵³ The average precipitation will decrease by 2030 in southern Africa, parts of Central America, the Mediterranean basin and northeastern South America. In Latin America, the UNFCCC predicts that the number of people experiencing water stress is likely to reach 7–77 million by the 2020s.

Many deltas in the world currently face water shortages which may be accentuated due to climate change and pollution. In the Mekong River Delta and Nile River Delta, freshwater shortage is currently already a big problem, and likely to increase in the near future.⁵⁴ In the Small Island Developing States, water sources will be seriously compromised due to rising sea levels, changes in rainfall and increased evapotranspiration. For example, in the Pacific, a

⁴⁹ Guy Howard & Jamie Bartram, *Domestic Water Quantity, Service Level and Health* (WHO 2003), p. 22.

⁵⁰ See e.g. WATER AND POPULATION DYNAMICS: CASE STUDIES AND POLICY IMPLICATIONS (Alex de Sherbinin & Victoria Dompka eds., 1998), glossary, at <http://www.aaas.org/international/ehn/waterpop/gloss.htm>.

⁵¹ IPCC Technical Paper VI, *above* note 3 at p. 36.

⁵² Parry ML et al. eds., *Climate change 2007: impacts, adaptation and vulnerability*, Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (2007), at p. 175; Nicholas Stern, *Stern Review on the Economics of Climate Change* (Oct. 30, 2006), p.62, available at http://www.hm-treasury.gov.uk/sternreview_index.htm, [hereinafter Stern Review].

⁵³ UNFCCC, *Climate Change: Impacts, Adaptation and Vulnerabilities in Developing Countries* (2009), pp. 19 and 21, available at <http://unfccc.int/resource/docs/publications/impacts.pdf> [hereinafter UNFCCC Climate Change Impacts 2009].

⁵⁴ Herman van der Most & Marcel Deltares et al. eds, ICIMOD, *Adaptation to climate change – another challenge in the sustainable development of deltas*, Perspectives on water and climate change adaptation prepared by CPWC, IUCN, WWC and IWA for World Water Forum 5, (2008) at p.4.

ten percent reduction in average rainfall by 2050 would lead to a twenty percent reduction in the size of the freshwater lens on the Tarawa Atoll, Kiribati.⁵⁵

Water availability is also likely to be reduced due to the decline of water supplies stored in glaciers and snow covers. The current trends in glacial melt suggest that flows will become substantially reduced as a consequence of climate change. As these glaciers retreat due to global warming, river flows are increased in the short term, but the contribution of glacier melt will gradually decrease over the next few decades.⁵⁶ Melting glaciers will increase flood risk during the wet season and strongly reduce dry-season water supplies to one-sixth of the world's population, predominantly in the Indian sub-continent, parts of China, and the Andes in South America.⁵⁷ Mountain regions provide more than 50% of the global river runoff, and the effects of climatic change are of tremendous importance to the often densely populated lowland regions that depend on mountain water for their domestic, agricultural, and industrial needs.⁵⁸

The Himalayas, the “Roof of the World” is the source of ten of the largest rivers in Asia. The basins of these rivers contain seven megacities. Climate change induced glacial melt could seriously affect half a billion people in the Himalayan region overall including a quarter of a billion people in China, who depend heavily on glacial melt for their water supply in the dry season.⁵⁹ In South Asia, hundreds of millions of people depend on perennial rivers such as the Indus, Ganges, and Brahmaputra – all fed by the unique water reservoir formed by the 16,000 Himalayan glaciers. In the Andes, glacial melt water supports river flow and water supply for tens of millions of people during the long dry season. Many small glaciers, e.g., in Bolivia, Ecuador and Peru, are expected to disappear within the next few decades. The increase in the number and severity of glacial melt-related floods will lead to slope destabilization which will in turn be followed by decreasing river flows.⁶⁰

However it is important to emphasise that the amount of water available for withdrawal is determined not only by natural conditions, climate change and demographic changes, but also, conscious public policy choices. Increased water scarcity, or a reduction in the overall availability of water for agricultural, industrial and household uses, need not automatically translate to a reduction in water “for personal or domestic uses.” Water for household use typically comprises a very small proportion of a given population's overall water requirements, less than 10 per cent in global average terms (compared with 70 per cent and 20 per cent for agriculture and industry, respectively).⁶¹ If one assumes that an amount in the range of 100 litres per capita per day would typically be required to realise the rights to water and sanitation, this amounts to 36,500 litres per capita per year or 36.5 cubic metres, representing a small fraction of the water available even in some of the more water scarce regions of the world. As the United Nations Development Program (UNDP) has observed, lack of sufficient access to water for household use is more a function of “power, poverty and

⁵⁵ UNFCCC Climate Change Impacts 2009, *above* note 53 at p. 25. A “freshwater lens” is a layer of fresh water that floats on saline groundwater, resulting from the natural process of rainwater infiltrating into the ground. The term also refers more generally to underground pools of freshwater that take the shape of a lens. These are critical sources of fresh water for many islands that may be threatened by rising sea levels.

⁵⁶ Parry ML et al. eds., *above* note 52 at p. 184.

⁵⁷ Stern Review, *above* note 52 at p. 56.

⁵⁸ Mats Eriksson et al. eds, ICIMOD, *The changing Himalayas – Impact of climate change on water resources and livelihoods in the Greater Himalayas*, Perspectives on water and climate change adaptation prepared by CPWC, IUCN, WWC and IWA for World Water Forum 5 (2008), p. 6.

⁵⁹ Stern Review, *above* note 52 at p.63. See also IPCC Technical Paper VI, *above* note 3, p. 43.

⁶⁰ UNFCCC Climate Change Impacts, *above* note 53, pp. 19 and 21.

⁶¹ Human Development Report 2006, *above* note 16 at p. 173.

inequality”, and a failure of governments to prioritise water allocation for basic needs and human dignity, than it is about scarcity *per se*.⁶²

*There is more than enough water in the world for domestic use, agriculture and for industry. The problem is that some people – notably the poor – are systematically excluded from access by their poverty, by their limited legal rights or by public policies that limit access to the infrastructures that provide water for lives and for livelihoods. In short, scarcity is manufactured through political processes and institutions that disadvantage the poor. When it comes to clean water, the pattern in many countries is that the poor get less, pay more and bear the brunt of the human development costs associated with scarcity.*⁶³

Nevertheless, the goal of improved safe access to drinking water will certainly be much harder to achieve in regions where runoff and groundwater recharge decrease as a result of climate change. Climate change puts additional stress on water resources and reinforces the competition over limited resources, but with correct prioritization, the realisation of the human rights to water and sanitation would not necessarily be threatened. Thus, the overarching imperative must be to set priorities in a way that the human rights to water and sanitation may be realised.

Quality of water and sanitation

According to General Comment 15, water must be clean, free from micro-organisms and chemical substances and therefore safe for domestic use and personal consumption. It must also be of an acceptable colour, odour and taste for each personal or domestic use.⁶⁴ According to the Independent Expert on the issue of human rights obligations relating to access to safe drinking water and sanitation, the quality dimension of the human right to sanitation requires that sanitation be safe and hygienic.⁶⁵

Climate change will negatively impact on the quality of water in many parts of the world. Increasing water temperatures, higher or lower groundwater levels, floods and droughts raise the threat of heightened micro-organisms, chemical substances and radiological hazards in drinking water.⁶⁶ Average precipitation is projected to rise over South Asia, parts of Central Africa and the high altitudes of both the northern and southern hemisphere; and there will be a greater likelihood of flooding in South Asia, parts of East Asia, and in Central and East Africa.⁶⁷ Coastal areas are vulnerable to the increase in sea levels, flooding, storm surges, and stronger winds. More than 150 million people in developing countries live less than five metres above sea level. During this century, flooding from the rising sea level and storm surges will threaten the viability of some islands as well as some major deltas, such as the Nile and Mekong.⁶⁸

Floods and droughts will exacerbate many forms of water pollution such as sediments, nutrients, organic carbon, pathogens and pesticides, and may distribute human excreta and its attendant health risks across entire neighbourhoods and communities. Sea level rise will

⁶² *Id.*, at 2.

⁶³ Summary, Human Development Report 2006, p. 11 at <http://hdr.undp.org/en/reports/global/hdr2006/#>.

⁶⁴ CESCR, General Comment 15, at para. 12(b).

⁶⁵ U.N. Doc. A/HRC/12/24 (2009), above note 20, at paras. 72-74.

⁶⁶ CESCR, General comment No. 15, p. 5.

⁶⁷ UNFCCC Climate Change Impacts 2009, above note 53, pp. 18, 19.

⁶⁸ van der Most et al. eds, above note 54, p. 3.

increase salinisation of groundwater , seriously impacting the health of the population.⁶⁹ This will promote algal blooms and increase the bacterial and fungal content. This will, in turn, impact adversely upon ecosystems, human health, and the reliability and operating costs of water systems.⁷⁰ Rapidly growing urbanization combined with increasing demand for freshwater and non-existent or inadequate sanitation infrastructure poses a threat to public health and increases water-borne diseases. Sanitation systems may be damaged by flooding and infrastructural deterioration caused by extreme weather conditions, interrupting services and further compromising the quality of drinking water.

Accessibility of water and sanitation infrastructure

General Comment 15 stipulates that water facilities must be accessible and within safe reach of everyone, without discrimination.⁷¹ The accessibility requirements for the right to sanitation are similar. Physical accessibility implies proximity of sanitation facilities to households, workplaces and public places, reliability, and accessibility for users with special access needs, among other factors. Sanitation facilities must be hygienically safe, technically and physically safe (including for use by women and children at night) and regularly maintained. Physical security should not be threatened in accessing water and sanitation facilities.⁷²

While the policy environment is no doubt the most critical determinant for the realisation of the rights to water and sanitation, the accessibility of water and sanitation services is heavily dependent upon infrastructure. The Inter-Governmental Panel on Climate Change (IPCC) has pointed out that “[s]afe access to drinking water depends more on the level of water supply infrastructure than on the quantity of runoff.”⁷³ Infrastructure variables include aquifers (which have variable degrees of confinement, depth and thickness of boundaries), water quality and water supply infrastructure (e.g. reservoirs, pumping wells and distribution networks).⁷⁴ Sanitation infrastructure includes sewerage systems, toilets, pit latrines, maintenance infrastructure and mechanised means for disposing of human excreta.⁷⁵

Rain-generated floods and landslides will deteriorate existing water and sanitation infrastructure, especially where these are not located within the house. Physical accessibility of water sources and sanitation facilities can be affected by climate change, for example where extreme weather events render it impossible to arrive at the water source or sanitation facility. Droughts also present serious risks, causing water wells and dams to dry up, contributing to water shortages in rural areas. Where there is too little water for waterborne sanitation systems, the latter systems may become blocked. Dry sanitation is likely to be more resilient to the threat of water scarcity than waterborne sanitation infrastructure. Pit latrines will often have superior resilience to climate change in view of their flexible design. However where groundwater levels rise, major challenges may exist in preventing the latrines becoming a large pollution risk to groundwater resources used for drinking-water supply.⁷⁶

⁶⁹ IPCC Technical Paper VI, *above* note 3, p. 2.

⁷⁰ *Id.*, p. 43.

⁷¹ CESCR, General Comment 15, para. 12(c).

⁷² U.N. Doc. A/HRC/12/24 (2009), *above* note 20, at paras. 75-6.

⁷³ IPCC Technical Paper VI, p. 45.

⁷⁴ *Id.*

⁷⁵ U.N. Doc. A/HRC/12/24 (2009) at paras. 72-6.

⁷⁶ United Kingdom Department for International Development (DFID) and the World Health Organisation (WHO), “*Vision 2030: The Resilience of Water Supply and Sanitation in the Face of Climate Change*” (2009) at 17 & 27. In drying environments, there will be little impact on latrine functioning and decreasing risks of groundwater pollution. Where the climate gets wetter, adaptations exist to the design to raise latrines, improve

Potential indirect effects of climate change on sanitation and water supply include the impacts of energy interruptions, increasing the unreliability of piped water and sewerage services.⁷⁷

Urban areas that rely on water services and waterborne sanitation face the associated risks of water scarcity, as well as flooding, which might destroy infrastructure and lead to contaminated water supplies, especially where sanitation systems are damaged. This will be exacerbated in densely populated areas, particularly if sanitation services are destroyed or interrupted and there are no alternative options. Because on-site treatment of sewerage is often not possible in urban areas, it is harder to safeguard the entire sanitation system – including transport and treatment in an off-site location – against floods and infrastructure damage caused by extreme weather. Unconventional or modified sewerage may offer greater resilience because water requirements are lower, and sewerage would not usually be linked to stormwater drainage. Although there has been some experience, in cities, with dry sanitation or sanitation that uses very little water, there remains much more to be learned about how simple and low-cost technologies can be used without posing an unacceptable risk of contamination.⁷⁸

Affordability of water and sanitation

General Comment 15 stresses the principles of equity and financial accessibility, stipulating that water must be affordable to everyone, including the poorest. “The direct and indirect costs and charges associated with securing water must be affordable, and must not compromise or threaten the realization of other Covenant rights.”⁷⁹ Similarly, under human rights law, sanitation “must be available at a price that is affordable for all people without limiting their capacity to acquire other basic goods and services, including water, food, housing, health and education guaranteed by other human rights.”⁸⁰

This is among the least understood normative requirements of socio-economic rights. Contrary to some misapprehensions, the human rights to water and sanitation do not require the State to provide water or sanitation services universally, free of charge. Rather, in general terms, States should establish a regulatory framework under which water and sanitation services (whether provided by public or private entities) are progressively available, accessible and affordable to all, and ensure that low-cost and targeted programmes are in place to ensure access at least to essential minimum levels of these rights for those who, for reasons beyond their control, are unable to realise these rights by themselves.⁸¹ As the Independent Expert has elaborated in connection with the human right to sanitation: “Various systems and structures can be put in place to ensure affordability, including income support measures, and measures that aim to reduce the cost of sanitation services. One option might be subsidy schemes to ensure affordability. Governments could also consider setting targets

the stability of the pit, and reduce pollution risks. Where groundwater levels rise, simple risk-based approaches to separating latrines and groundwater sources are effective and should be more widely deployed.

⁷⁷ DFID & WHO, *Id.*, at p. 4.

⁷⁸ DFID & WHO, *Id.*, at pp. 17, 27 & 37.

⁷⁹ CESCR, General Comment No. 15, para. 12(c)(ii).

⁸⁰ U.N. Doc. A/HRC/12/24 (2009) at paras. 77-79.

⁸¹ CESCR, General Comment No. 15, paras. 12(c)(ii), 13-16, and 25. More specifically, para. 27 provides: “To ensure that water is affordable, States parties must adopt the necessary measures that may include, *inter alia*: (a) use of a range of appropriate low-cost techniques and technologies; (b) appropriate pricing policies such as free or low-cost water; and (c) income supplements. Any payment for water services has to be based on the principle of equity, ensuring that these services, whether privately or publicly provided, are affordable for all, including socially disadvantaged groups. Equity demands that poorer households should not be disproportionately burdened with water expenses as compared to richer households.”

which represent a percentage of the household income. Experience suggests that in-kind contributions (such as labour) are also effective in sanitation projects. Technology choice can also have an impact on affordability (as well as sustainability). Human rights do not dictate which policy is best, but insist on a context-specific consideration of the situation.”

The deterioration of water availability and quality, caused by climate change, may have the indirect effect of raising operating costs and escalating the price of domestic water and sanitation, making these services unaffordable for low-income and marginalized households and posing significant challenges for tariff systems. The affordability of water and sanitation will be likely to decrease as water system reliability declines and operating costs for services rise, primarily due to the deterioration of water quality and water and sanitation infrastructure.⁸² The necessary reconstruction will not only render services more expensive, but a decrease in the affordability of water will be likely to generate or exacerbate discrimination against certain population groups, including poor people and women, who may then suffer increased risks of deprivation of basic water and sanitation services. This, in turn, may deepen poverty, exacerbate health problems, hamper development and increase the risk of political conflict and social instability.⁸³

Acceptability of water and sanitation services

As part of the criteria for “accessibility” of water for personal or household uses, General Comment No. 15 stipulates that “All water facilities and services must be of sufficient quality, culturally appropriate and sensitive to gender, life-cycle and privacy requirements.”⁸⁴ Under international human rights law, sanitation facilities and services must be culturally acceptable. As the Independent Expert has argued: “Personal sanitation is still a highly sensitive issue across regions and cultures and differing perspectives about which sanitation solutions are acceptable must be taken into account regarding design, positioning and conditions for use of sanitation facilities. In many cultures, to be acceptable, construction of toilets will need to ensure privacy. In most cultures, acceptability will require separate facilities for women and men in public places, and for girls and boys in schools. Women’s toilets need to accommodate menstruation needs. Facilities will need to allow for culturally acceptable hygiene practices, such as hand washing and anal and genital cleansing.”⁸⁵

As water distribution patterns change dramatically, problems of acceptability of adaptation strategies will arise. Establishing water points or sanitation facilities which are culturally unacceptable (because of their location, gender bias or gender blindness, technology choice or other reason) should be prevented and addressed. Ensuring participation of the concerned communities in the design and implementation of interventions is crucial in this regard.

⁸² IPCC Technical Paper VI, p. 2.

⁸³ *Id.*, p. 45.

⁸⁴ CESCR, General Comment No. 15, para. 12(c).

⁸⁵ U.N. Doc. A/HRC/12/24 (2009) at para. 80.

Discriminatory impacts of climate change

Climate change will magnify the uneven distribution of risk skewing disaster impacts even further towards poor communities in developing countries.⁸⁶ One recent quantitative assessment of the human impacts of disasters found that “countries with high levels of income inequality experience the effects of climate disasters more profoundly than more equal societies.”⁸⁷ The OHCHR notes that climate change impacts “will be felt most acutely by those segments of the population who are already in vulnerable situations due to factors such as poverty, gender, age, minority status, and disability.”⁸⁸ Approximately 1 billion people live in informal settlements in developing countries’ cities: many of these are in hazard prone areas. Insofar as the right to water is concerned, other individuals and groups who have traditionally faced difficulties in exercising this right include indigenous peoples, refugees, asylum seekers, internally displaced persons, migrant workers, prisoners and detainees.⁸⁹

Women and girls face specific obstacles to the enjoyment of their rights to water and sanitation and bear the brunt of increasing water scarcity and poverty. They are most often the ones sacrificing their time and development opportunities to fetch water, are frequently responsible for the provision of food and water in the household, and face particular challenges in accessing sufficient, safe and culturally appropriate sanitation facilities. Therefore women and girls will often be disproportionately affected by the adverse impacts of climate change upon the rights to water and sanitation.⁹⁰ Moreover, recent research by the United Nations Children’s Fund (UNICEF) suggests that climate change will disproportionately affect children by exacerbating existing health risks and disrupting the natural resource base sustaining nutrition and water security, among numerous other factors.⁹¹ Extreme weather events and reduced quantity and quality of water already are leading causes of malnutrition and child death and illness, including through poor sanitation. Climate change will be likely to exacerbate these stresses.

D. Integrating the human rights to water and sanitation in climate change policy-making⁹²

⁸⁶ Global Assessment Report on Disaster Risk Reduction (2009): Risk and poverty in a changing climate. Invest today for a safer tomorrow, p. 4.

⁸⁷ UNITED NATIONS DEVELOPMENT PROGRAM, HUMAN DEVELOPMENT REPORT 2007/8, FIGHTING CLIMATE CHANGE: HUMAN SOLIDARITY IN A DIVIDED WORLD (2007), at p. 80, *citing* Intergovernmental Panel on Climate Change, *Climate Change 2007: Fourth Assessment Report* (Susan Solomon et. al., eds., 2007). See also Warren, R. et. al, *Understanding the Regional Impacts of Climate Change*, Research Report Prepared for the Stern Review on the Economics of Climate Change. Research Working Paper No. 90, Tyndall Centre for Climate Change (Sept. 2006); and TIMMONS ROBERTS & BRADLEY C. PARKS, A CLIMATE OF INJUSTICE: GLOBAL INEQUALITY, NORTH-SOUTH POLITICS AND CLIMATE POLICY (2007).

⁸⁸ United Nations Office of the High Commissioner for Human Rights, *Report on the Relationship Between Climate Change and Human Rights*, U.N. Doc. A/HRC/10/61 (Jan. 15, 2009), para. 42.

⁸⁹ CESCR, General Comment No. 15, para. 16.

⁹⁰ Gender and Climate Change Network, *Women for Climate Justice Position Paper* (Dec. 2007); and see Gender and Climate Change documents, available at <http://www.gencc.interconnection.org/>. The situation is further exacerbated by gender differences in property rights, political participation, access to information and in economic, social and cultural roles.

⁹¹ United Nations Children’s Fund, *Climate Change and Children: A Human Security Challenge* (Nov. 2008), available at http://www.unicef-irc.org/publications/pdf/climate_change.pdf; United Nations Children’s Fund, *Our Climate, Our Children, Our Responsibility* (2008), available at <http://www.unicef.org.uk/campaigns/publications/pdf/climate-change.pdf>.

⁹² This section of the paper draws upon Mac Darrow, *Climate Change and the Right to Water*, in *THE RIGHT TO WATER: THEORY, PRACTICE, PROSPECTS* (Malcolm Langford & Anna Russell eds.; forthcoming 2010).

The foregoing outline of human rights impacts, while necessarily schematic in nature, lends itself to a small number of priority actions from the perspective of the human rights to water and sanitation. The focus areas for recommendations are principally in the field of climate change adaptation, as this is the field of policy-making more clearly circumscribed by international human rights law, which regulates the entitlements of individuals *vis-à-vis* the State in which they reside.

The climate-related threats to water and sanitation documented in this paper will be difficult to overcome in many cases in the absence of international cooperation. In some cases, for example for many low-lying and small island States and LDCs, international cooperation is utterly indispensable. This applies equally to mitigation and adaptation policy measures. Therefore, mindful of the well recognised limitations of the international human rights regime as a framework for extra-territorial accountability, consideration is also given to the ways in which the human rights to water and sanitation may strengthen policy responses in the fields of external financing and technology transfer.

This Part of the paper begins with a synthesis of the main principles and pathways through which the human rights framework, including the human rights to water and sanitation more specifically, may usefully influence and strengthen climate change policy-making. This serves as the basis for conclusions and recommendations towards strengthened legal and policy coherence in the fields of mitigation, adaptation, financial assistance and technology transfer. Specific consideration is given to how procedural rights derived from international human rights and environmental law may strengthen transparency, participation and accountability in climate change decision-making, as well as how States may pursue more coherent interpretations of their legal obligations under the climate change and human rights treaty regimes, and more effective inter-sectoral policy responses.

How human rights can influence climate change policy-making

Respecting human rights obligations in the context of climate change is not only a binding legal obligation incumbent on all States, but also puts a human face on the climate change problem. Human rights standards and principles have the potential to inform and strengthen policymaking in the area of climate change, promoting inclusive processes and equitable and sustainable outcomes, rooted in the bedrock of binding international legal obligations.

The human rights framework focuses upon the normative requirements of availability, accessibility, affordability, acceptability and quality insofar as the social implications of climate policy are concerned. States have both negative and positive obligations in guaranteeing the rights to water and sanitation. First, the State must refrain from interfering with existing access to water and sanitation. When taking adaptation measures, it must be ensured that these do not negatively impact on the rights to water and sanitation. With all interventions taken, the standard that must not be compromised is that of safe, accessible, affordable, and acceptable water and sanitation in sufficient quantities – which must be realized for everyone as the ultimate aim. The State should also take steps to ensure that third parties including transnational corporations do not violate the rights to water and sanitation, for example through pricing policies that put essential services and adaptation measures out of reach of the poorest communities.

As to the legal obligations with more obvious resource implications, the State should implement appropriate adaptation measures to ensure that water and sanitation infrastructure

is resilient to extreme weather events, rising sea levels and other climate-related threats. It has to raise awareness about hygiene, water conservation and other issues relevant to enjoyment of the rights to water and sanitation in the context of climate change. States are obliged to move progressively forward in realising the rights to water and sanitation, avoid arbitrary retrogression in the realisation of these rights, undertake maximum efforts to realise them within all available resources with priority given to the most excluded or vulnerable, and – where best efforts are not sufficient – request international assistance. States should ensure that water and sanitation are affordable for all.

It is important to emphasise that the human rights framework is not a blue-print for decision-making in climate policy or any other field of public policy. However it does offer a valuable compass for policy orientation, for the benefit of both legal and policy coherence. The normative framework of the rights to water and sanitation embodies an internationally agreed set of values that should frame and inform the difficult policy choices and trade-offs involved in climate change policy-making, decisions that might otherwise proceed from purely cost-benefit or utilitarian calculations. For example, the per capita unit costs of safeguarding access to water or sanitation services for certain minority groups in rural areas might be considered excessive from a purely cost-benefit standpoint. Such calculations often appear value-neutral, but on closer examination may reflect contested assumptions and quite polarised ideological positions on universal service provision and the comparative advantages of the market, as distinct from public action, in service delivery. The “positive science” of economics does not easily deal with problems of exploitation and power relations which perpetuate discrimination against these and other groups of people.⁹³

A human rights approach to climate change policy-making prioritises good *processes* as well as equitable and sustainable outcomes. While it does not pretend to offer ready-made solutions to complex policy choices and trade-offs, a human rights approach at a minimum seeks to ensure the active, free and meaningful participation of all affected groups in connection with decisions that affect them, taking into account the values of non-discrimination and equality reflected in international human rights law. Whatever the competing claims about different policy choices in a given situation, it is essential that policy choices are the product of inclusive and legitimate national processes. Timely, accessible and effective accountability mechanisms should be in place to provide redress for those whose rights are violated in the course of climate change policy-making.

To illustrate this point: In the challenge of managing competing demands for water in the agricultural, manufacturing and other sectors, human rights treaty standards prioritise access to water for essential personal and domestic purposes for all.⁹⁴ However as indicated earlier, this goal can be pursued through a range of policy instruments including appropriate low-cost techniques and technologies, appropriate pricing policies such as free or low-cost water services, targeted subsidies, and/or income supplements. It is up to the competent national authorities, with the active participation of rights-holders, to define not only the optimal policy mix but also a set of contextualised national and local standards: a quantity of water sufficient for human dignity, life and health. This should be determined based on a local assessment taking into account unique geographic, climate, cultural, personal and other considerations. Similar considerations apply in connection with national and local standard-setting and benchmarking for the right to sanitation. Solutions to the problems of availability,

⁹³ Dan Seymour & Jonathan Pincus, *Human Rights and Economics: The Conceptual Basis for Their Complementarity*, 26(4) DEV. POL. REV. 384-405 (2008).

⁹⁴ See e.g. CESCR, General Comment No. 15, para. 6.

accessibility, affordability and quality of water and sanitation in the context of climate change must be designed with the participation of the concerned communities and pay special attention to the needs of groups suffering discrimination in a given context, for example women, children, persons with disabilities, elderly persons, migrants, indigenous peoples, internally displaced persons and migrant workers. Whatever policy choices prove effective and legitimate in a given context, the human rights framework seeks to guarantee a minimum floor of socio-economic rights beneath which nobody should be allowed to fall.

Climate change mitigation measures

The purpose of mitigation actions is to prevent global average temperatures rising above the dangerous threshold of 2°C above pre-industrial levels. The Kyoto regime sets in place binding emissions reductions obligations upon a certain number of States parties, although “developing countries” (a large and undifferentiated category) are exempt in view of their relative lack of historical responsibility for GHG emissions and their comparatively urgent needs for fossil fuel energy for economic growth and poverty reduction purposes. The Bali Action Plan encourages the adoption of measurable, reportable, and verifiable mitigation actions, as does the Copenhagen Accord of 18 December 2009.⁹⁵

The COP 15 negotiations did not succeed in concluding a legally binding successor agreement to the Kyoto Protocol. Yet, for the first time, developing countries agreed to join global GHG mitigation efforts. Under the Copenhagen Accord, developing countries agreed to submit GHG inventories every two years, as well as subject their own mitigation actions to domestic “monitoring, reporting and verification” (MRV) measures. Mitigation actions supported by international finance or other assistance will be submitted to international MRV.⁹⁶ Many, but by no means all, participating States at COP 15 have signed up to the Copenhagen Accord, although most emphasise its non-binding, political character.⁹⁷ Pending the development of appropriate MRV processes, there is no assurance of the adequacy and impact of these mitigation commitments. Nevertheless, as at February 2010 the UNFCCC Secretariat had received submissions from more than ninety countries, representing more than 80% of GHG emissions, regarding their plans to reduce their GHG emissions.

Disturbingly, however, the present scale of GHG emissions reduction commitments falls far short of requirements. On the most authoritative projections available at present, in order to avoid dangerous levels of GHG emissions the total amount of global emissions needs to fall by at least 50 to 85 per cent from 2000 levels by 2050. This means that heavily polluting OECD countries will need to have cut their emissions by 80 to 90 per cent, and developing countries will probably need to cut their collective emissions by 30 to 60 per cent, having peaked by the year 2025.⁹⁸ According to one report, this would mean GHG emissions from the global South must begin to be reduced “almost immediately, and must be dropping precipitously by 2025.”⁹⁹ This scenario would represent a radical departure from one of the

⁹⁵ The text of the Copenhagen Accord is available at http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf. For an appraisal see Daniel Bodansky, “The Copenhagen Climate Change Accord,” 14(3) A.S.I.L. INSIGHT (14 Feb., 2010), available at <http://www.asil.org/files/insight100212pdf.pdf>.

⁹⁶ Copenhagen Accord, *Id.*, para. 5.

⁹⁷ Richard Black, “U.N. climate talks to resume amid fear of more divisions,” *BBC News*, 8 April 2010, at <http://news.bbc.co.uk/2/hi/science/nature/8610316.stm>.

⁹⁸ Stephen Humphreys, *Conceiving Justice: Articulating Common Causes in Distinct Regimes*, in *HUMAN RIGHTS AND CLIMATE CHANGE*, 299, 305 (Stephen Humphreys ed., 2010).

⁹⁹ Paul Baer, Tom Athanasiou & Sivan Karta, *The Right to Development in a Climate Constrained World* (Heinrich Böll Foundation, 2007) at 23-4.

fundamental premises of the UNFCCC and Kyoto regimes, to the effect that poorer countries' development needs should not be sacrificed in the quest for global emissions reduction. Given the polarised positions between North and South laid bare at Copenhagen, it is difficult to imagine how such a scenario would be politically acceptable and practically feasible for many "developing countries."

There are many recommendations that could usefully be made as part of a global effort to address the shortcomings in the UNFCCC and post-Copenhagen climate change mitigation regimes, beginning with urging the adaptation at COP 16 of a legally binding framework for more ambitious emissions reductions. Carbon trading is likely to be at the centre of global emissions mitigation efforts, and it will be essential to level the playing field in the carbon market to ensure that poorer countries' poverty reduction efforts are not unfairly compromised by their mitigation responsibilities.¹⁰⁰ Enhanced efforts will also be needed in future negotiations to ensure that ideas about "equity" and burden-sharing for global GHG emissions reductions take into account not only historical responsibility for GHG emissions and capacity to mitigate, but also – from a human rights perspective – the level of vulnerability of populations within countries.¹⁰¹

In order to protect the human rights to water and sanitation more specifically, it is essential that States carry out human rights impact assessments for any mitigation policies or actions they plan to carry out. This applies carbon trading schemes generally, for the reasons outlined above, as well as also to the Kyoto Protocol's "Clean Development Mechanism" (CDM) more specifically, under which polluting States can receive GHG emission credits if they set up schemes to combat climate change in developing countries.¹⁰² For example, biofuel projects and "clean coal" projects are intended to generate alternative cleaner sources of energy than fossil fuels. However they may also use a great amount of water and may therefore have the effect of generating additional water stress and scarcity which – in the absence of an appropriate regulatory framework which prioritises the right to water – may undermine access to water for personal and domestic use. This, in turn, may impact adversely on the right to sanitation, the right to food, and related rights. Such impact assessments should take into account the normative content of the rights to water and sanitation discussed earlier, that is to say, availability, accessibility (including affordability), acceptability, and quality. States should also consider the potential extra-territorial impacts of mitigation measures, mindful that watersheds do not necessarily correspond with national boundaries. Finally, mitigation plans and actions should be undertaken transparently and in a non-discriminatory fashion, and ensure the active, free and meaningful participation of all relevant stakeholders.

¹⁰⁰ The global carbon market more generally is presently focused on easing cuts in richer countries. Poorer countries have resisted accepting binding carbon emissions "caps" – which are the basis for an emissions trading regime – on the basis of their comparatively pressing growth and poverty reduction demands which at least in the shorter term continue to depend upon carbon-based energy sources (although the assumptions under which growth translates to poverty reduction are not always explained). With finite allocations within the global carbon market, and in the absence of rapid technology transfer to enable low-carbon transitions in poorer countries, many of these countries will effectively be priced out of the global carbon market at the time that they seek to join. On present indications, "it is extremely unlikely that many of the poorest countries will ever be able to rely upon carbon-based energy to fuel the kind of living standards that would ensure even basic rights guarantees for all." Humphreys, *above* note 99 at 307. A human rights assessment of emissions trading should therefore be seen in light of demands for more robust adaptation policies, research and transfer of new low-carbon technologies, and relaxation of intellectual property restrictions and other access barriers. Humphreys, *Id.*, at 307-8.

¹⁰¹ For a more elaborate set of recommendations along these lines see Philippe Cullet, *The Kyoto Protocol and Vulnerability: Human Rights and Equity Dimensions*, in Humphreys ed. (2010), *above* note 99, at 183, 193-8.

¹⁰² See Kyoto Protocol, *supra* note 35, Articles 6, 7, and 12 respectively.

National adaptation measures

The economic and political counter-incentives standing in the way of effective cooperative action on climate change mitigation are formidable, raising doubts as to whether the international community will ultimately succeed in keeping GHG emissions below dangerous levels.¹⁰³ This puts additional burdens and pressures upon national response measures to existing and foreseeable climate change harms, otherwise known as climate change “adaptation.”

There are many possible aspects of adaptation relevant to the human rights to water and sanitation worthy of consideration here, however this section of the paper focuses upon three key themes: integrating the human rights to water and sanitation within the National Adaptation Plans of Action (NAPAs); strengthening the engagement of water, sanitation and human rights constituencies within the UNFCCC’s Nairobi Work Programme; and integrating the human rights to water and sanitation within the Integrated Water Resource Management (IWRM) framework.

o National Adaptation Plans of Action (NAPAs)

As indicated earlier, one of the ways that the UN tries to facilitate adaptation to climate change is through NAPAs, pursuant to the agreement under UNFCCC auspices in 2001. The aim of NAPAs is to build adaptive capacity in LDCs, serving as a channel through which the latter may communicate their most urgent and immediate adaptation needs along with resource mobilisation requirements. The NAPA document should also identify links to more long-term strategy frameworks, such as Multilateral Environmental Agreements (MEAs), Poverty Reduction Strategy Papers (PRSPs) and applicable national agreements and regulatory instruments, such as water acts.

By late 2008, 38 LDCs had completed the process leading to the NAPA document and presented it to the UNFCCC.¹⁰⁴ As the agriculture sector is the most important sector to most of the LDCs – mainly from the perspective of food security but also to some degree for income generation – the impact of floods and droughts on the agricultural sector (food security) emerges as a fairly consistent theme. This is the case for most of the countries that have completed their NAPAs.¹⁰⁵ Forestry sector impacts are also noteworthy, given the relationship between deforestation and climate-induced flooding. For example, catastrophic floods in China, Thailand and the Philippines prompted logging bans that reportedly “put

¹⁰³ See e.g., CLIVE HAMILTON, *REQUIEM FOR A SPECIES: WHY WE RESIST THE TRUTH ABOUT CLIMATE CHANGE* (Sydney: Allen & Unwin, 2010); and Thomas Pogge, *Poverty, Climate Change and Over-Population*, 38(3) *GEO. J. INT’L & COMP. L.* (forthcoming 2010) (referring to the problem of regulatory capture of climate change negotiations and policy-making by elite interest groups).

¹⁰⁴ The following NAPAs were submitted by April 2008: In 2004 Mauretania, in 2005 Bangladesh and Samoa, in 2006 Bhutan, Comoros, Djibouti, Haiti, Madagascar, Malawi, Niger, DR Congo and Senegal, in January–June 2007 Burundi, Cambodia, Eritrea, Kiribati, Lesotho, Rwanda and Tuvalu, in July–December 2007 Burkina Faso, Cape Verde, Guinea, Mali, Sao Tome and Principe, Sudan, Tanzania, Uganda, Vanuatu and Zambia, in early 2008 Benin, Gambia, Guinea-Bissau and the Maldives, and by July 2008 Central African Republic, Ethiopia, Liberia, Mozambique and Sierra Leone.

¹⁰⁵ Gunilla Björklund, Håkan Tropp, Joakim Harlin, Alastair Morrison & Andrew Hudson for UNDP, *Water Adaptation in National Adaptation Programmes for Action: Freshwater in Climate Adaptation Planning and Climate Adaptation in Freshwater Planning*, A Dialogue Paper for the United Nations World Water Assessment Programme (2009), at p. 5.

millions of people out of work.”¹⁰⁶ It appears also to be the case that, especially in political repressive environments, actions to promote political, social and economic rights may be a more important adaptive strategy than locally-based adaptation measures focused on specific climate impacts.¹⁰⁷

However, even though climate change impacts through water-related processes, with implications for the rights to sanitation, food, health, employment and a range of other rights, most NAPAs lack a holistic approach to adaptation responses in the water sector.¹⁰⁸ Conversely, national water and sanitation policies, plans and programmes often omit climate change adaptation requirements. Therefore, efforts are needed to ensure that NAPAs are more systematically integrated within or linked to longer-term national development strategies and adaptation impacts concerning the human rights to water and sanitation.

In the view of the Independent Expert, the following criteria should be factored into NAPAs and national adaptation responses more generally:

- a) States should base their adaptation responses (and NAPAs, in the case of LDCs) upon the explicit recognition of water and sanitation as human rights, with national goals, targets and indicators aligned with human rights standards in force for the country concerned;
- b) States should establish targets for universal access to water and sanitation through appropriate consultative mechanisms, where such targets are not already in place;
- c) Sector plans and strategies should specify minimum quantities of water for personal and domestic use, minimum sanitation services, and prioritise access to these minimum amounts;
- d) Access targets should prioritise the provision of water and sanitation in schools, including separate facilities for boys and girls, as well as at health centres, and there should be specific targets for the continuity of supply in order to limit disruptions in access caused by water rationing, along with provision for equitable distribution of the burdens caused by any disruptions;¹⁰⁹
- e) States should tailor national water and sanitation targets and benchmarks to specific regions of the country, with a particular focus on disadvantaged regions most vulnerable to climate change, and should consider introducing a requirement that all regions be required to meet a common benchmark (for example, that all regions improve access to water and sanitation by a particular percentage per annum);
- f) States should ensure that the priorities and lines of action reflected in national water and sanitation strategies are based upon an in-depth and integrated analysis of the root causes for the non-realisation of relevant human rights, thereby providing the basis for collaborative inter-sectoral responses within the framework of national development strategies or poverty reduction plans;

¹⁰⁶ Frances Seymour, *Forests, Climate Change and Human Rights*, in Stephen Humphreys ed. (2010), *above note* 99, at 221. In light of these experiences, the author notes (at 221): “There is a risk that in the name of adaptation to climate change, governments will limit settlement and farming in sensitive watersheds, which could in turn displace the poor without offering adequate compensation.”

¹⁰⁷ Jon Barnett, *Human Rights and Vulnerability to Climate Change*, in Stephen Humphreys ed. (2010) at 267.

¹⁰⁸ Gunilla Björklund et al., *above note* 106 at p. 7.

¹⁰⁹ Centre on Housing Rights and Evictions, “The Significance of Human Rights in MDG-based Policy Making on Water and Sanitation: An Application to Kenya, South Africa, Ghana, Sri Lanka and Laos,” COHRE, Geneva (2009), p. 30-31.

- g) States should implement an explicitly gender-sensitive approach to adaptation programmes and policy-making, implementation, monitoring and evaluation, in view of the particular needs of women and girls concerning water and sanitation;¹¹⁰ and
- h) Within the context of national adaptation strategies and development plans, States should make explicit provision for supporting, as appropriate, large-scale public awareness campaigns providing information and promoting behaviour change in sanitation and hygiene promotion.

o Nairobi Work Programme (NWP)

The main mechanism that is currently dealing with building capacity and enhancing knowledge sharing for adaptation more broadly is the Nairobi Work Programme (NWP) under the UNFCCC, set to expire at the end of June 2010. The Programme was adopted by the Conference of the Parties to the UNFCCC in 2005 and was renamed in 2006. The objectives of the NWP are twofold: (a) to assist countries, in particular developing countries, including the least developed countries and small island developing States, to improve their understanding and assessment of impacts, vulnerability and adaptation; and (b) to assist countries to make informed decisions on practical adaptation actions and measures to respond to climate change on a sound, scientific, technical and socio-economic basis, taking into account current and future climate change and variability.¹¹¹

The NWP has run a number of workshops, is building a database of best practice on adaptation, and fields submissions from Parties and relevant experts and organisations on requirements for adaptation and examples of adaptation in action. However, there is scope for the water and sanitation sectors to collaborate more effectively with the NWP in order to integrate expertise and experiences necessary for an adequate response to climate change into the work of the NWP. The question therefore arises as to how to engage and leverage the specialised technical expertise in the water and sanitation sectors, along with expertise in connection with the human rights to water and sanitation more specifically, within the existing and future institutional arrangements for climate change adaptation.

The discussion on the appropriate mechanisms, actions and institutional arrangements to bring together the relevant actors on water, sanitation and climate at a multilateral level is still in its infancy. The same is true for human rights mainstreaming in climate change policy and institutional arrangements. It will be useful to intensify and broaden these discussions in the lead-up to COP 16 in December 2010, to consult a range of governmental and non-governmental stakeholders working on both water, sanitation, climate and human rights respectively, on the following question: If the NWP is to receive a mandate from UNFCCC to be extended beyond June 2010, how can the water and sanitation sectors and human rights experts more effectively engage in its activities?

The low level of engagement by water, sanitation and human rights specialists in the NWP process may partly reflect the fact that the NWP focuses on “action-oriented sub-themes” rather than sector-orientated action. To this extent it may be helpful to propose a mechanism under the NWP, specifically mandated to bring together experts and implementers on adaptation in the water and sanitation sectors, along with human rights expertise. By bringing together these sources of expertise within an effective knowledge sharing and capacity

¹¹⁰ U.N. Doc. A/HRC/12/L.19 (Sept. 25, 2009), para. 4(e).

¹¹¹ UNFCCC Climate Change Impacts 2009, *above* note 53, p.10.

building forum, the role of States in protecting their populations from climate-related threats to water and sanitation would more effectively be supported.

o Integrated Water Resources Management

The trade-offs between different water uses will be accentuated by climate change. Sound water management will therefore be key to successful adaptation strategies, in the same way that energy policy is key to mitigation.¹¹² It is primarily poor water management and lack of water entitlements, rather than physical water scarcity, that generate water-related tensions and poverty.¹¹³ The variability in water availability, a direct threat to the legal requirement for sustainable access, will require increased resilience in water management systems. A number of countries have begun making inroads in this direction, however major public investments will be needed to achieve sustainable results.¹¹⁴

Integrated Water Resources Management (IWRM) provides a potentially valuable framework by which to adapt to climate impacts on water resources. IWRM is an approach to water management that explicitly recognises the need to structure and manage trade-offs between competing water uses and promote the coordinated development and management of water, land and related resources, while preserving the integrity of the resource base and the sustainability of vital ecosystems.¹¹⁵ The IWRM framework seeks to promote flexible and resilient freshwater management systems, with policies incentivizing supply-side innovation and effectively controlling demand across competing users, and equity in water allocation. Strengthening effective water governance, involving stakeholders in decision-making, improving transboundary water arrangements and adapting and restoring “natural infrastructure” and ecosystem services are recognised elements of the IWRM framework that may be particularly important in regions adversely impacted by climate change.¹¹⁶ The human rights framework could further strengthen the IWRM framework by serving as a guide to setting development priorities, including prioritising personal and domestic uses, and providing transparent mechanisms to address conflicting rights and interests. In times of changing distribution patterns of water, the human rights principles of participation, non-discrimination and accountability assume even greater importance.

¹¹² Claudia Sadoff & Mike Muller, *Better water resources management: Greater resilience today, more effective management tomorrow*, Perspective paper for Cooperative Programme on Water and Climate, World Water Council, IUCN & International Water Association, “Perspectives on Water and Climate Change Adaptation”, undated, p.13, available at http://www.gwpforum.org/gwp/library/Planning_Better_WRM.pdf.

¹¹³ Castillo, G.E. et al, *Reversing the Flow: Agricultural Water Management Pathways for Poverty Reduction*, in WATER FOR FOOD, WATER FOR LIFE: A COMPREHENSIVE ASSESSMENT OF WATER MANAGEMENT IN AGRICULTURE 149-91 (David Molden ed., 2007), cited in UN Department of Economic and Social Affairs, Report on the World Social Situation (2009) [hereinafter WESS 2009], at 90.

¹¹⁴ WESS 2009, *Id.* at 90.

¹¹⁵ Sadoff & Muller, *above* note 112, at p.6.

¹¹⁶ Stakeholder Forum and Stockholm International Water Institute (2009) Water and Climate Change Adaptation: Key Messages for the 15th Conference of Parties (COP-15) of the United Nations Framework Convention on Climate Change.

While States Parties have the primary legal obligations for the realisation of human rights domestically, all States have responsibilities to create an enabling environment for human rights realisation.¹¹⁷ Moreover, as discussed earlier, certain legal obligations associated with economic, social and cultural rights (including the rights to water and sanitation) are to be discharged within the framework of international cooperation. States failing to meet their obligations by reason of legitimate resource constraints are required to call upon international assistance, in which circumstances the international community has a responsibility to respond – whether bilaterally or collectively, through aid, provision of water or sanitation resources, financial and technical assistance or other appropriate measures.

Improving official aid flows and financing for climate change mitigation and adaptation is one potentially important element within an “enabling environment” for the human rights to water and sanitation. The Copenhagen Accord, in paragraph 5, commits developed countries to “provide adequate, predictable and sustainable financial resources, technology and capacity-building” to help developing countries adapt to climate change. Moreover, paragraph 8 provides: “Scaled up, new and additional, predictable and adequate funding as well as improved access shall be provided to developing countries” to support mitigation, adaptation, technology development and transfer and capacity-building. Developed countries committed to provide “new and additional resources... approaching USD 30 billion for the period 2010-2012” for these purposes. Funding for adaptation will be prioritized for the most vulnerable developing countries, including LDCs and Small Island States. Developed countries also committed to mobilise jointly USD 100 billion a year by 2020 to address the mitigation needs of developing countries. New multilateral funding for adaptation will be delivered through “effective and efficient fund arrangements, with a governance structure providing for equal representation of developed and developing countries.” A significant portion of such funding will flow through a newly established “Copenhagen Green Climate Fund.”

These commitments seem very welcome on their face. The promised mobilisation of USD 100 billion annually for developing countries’ mitigation needs by 2020, in particular, appears noteworthy. The proliferation of adaptation funds to date has frustrated ambitions for coherence, coordination, effectiveness, transparency and accountability in international aid, contrary to the requirements of the 2005 Paris Declaration on Aid Effectiveness.¹¹⁸ Hence the fact that this issue was recognised in the Copenhagen Accord is a positive signal, along with commitments to ensure the equal representation of developed and developing countries in governance structures for multilateral adaptation financing.

However, the aid commitments appear to be seriously out of step with objective needs. The World Bank has projected that the financial requirements for mitigation in developing countries could reach \$140–\$175 billion a year by 2030 with associated financing needs of \$265–\$565 billion, and that the additional investment and financing required for climate change adaptation purposes would be between \$30-100 billion annually.¹¹⁹ Translating political commitments into action is an even greater challenge. The above estimate of financing needs for adaptation dwarfs the US\$1 billion per annum that is presently made

¹¹⁷ UDHR article 28. See also the provisions of the U.N. Charter and human rights treaties cited *above* notes 22-33 and accompanying text, and more specifically General Comment No. 15, paras. 30-36.

¹¹⁸ For background on the history and purposes of the Paris Declaration on Aid Effectiveness, see http://www.oecd.org/document/18/0,2340,en_2649_3236398_35401554_1_1_1_1,00.html.

¹¹⁹ WORLD BANK, WORLD DEVELOPMENT REPORT 2010: DEVELOPMENT AND CLIMATE CHANGE (2009) [*hereinafter* WDR 2010], at 22-3.

available for those purposes.¹²⁰ The same is true for mitigation: current flows of mitigation finance for developing countries average at some \$8 billion a year to 2012,¹²¹ far less than the USD 100 billion per annum promised in Copenhagen. This grim picture is compounded by shortcomings in official aid flows more widely,¹²² and the failure of national poverty reduction strategies to properly reflect global partnership commitments.¹²³

When we look at mitigation and adaptation requirements for water and sanitation more specifically, there is further cause for concern. For example, a recent assessment of the policy frameworks on water resources and climate change among major donor organizations shows that donors do not adequately address the climate change impacts at the macro-economic level as a result of changing hydrological conditions, increasing vulnerability to rainfall variability, and droughts and floods. This report recognises that several donors have shown concern for the impacts of climate change and linkages to water resources and energy, but fail to identify and finance appropriate mitigation and adaptation strategies in the water and climate change sectors.¹²⁴

Beyond the scope of climate change mitigation and adaptation, we can observe that aid for water supply and sanitation has been increasing, but it has not been well-targeted: least-developed countries (LDCs) receive only 42% of aid for these sectors, and the proportion of aid for *basic* sanitation and drinking-water services, of greatest relevance to many of the poorest communities, decreased from 27% to 16% over the period 2003–2008.¹²⁵ Moreover, the total aid for all aspects of water, as measured by the Organisation for Economic Co-operation and Development (OECD), fell from 8% to 5% of total Official Development Assistance (ODA) between 1997 and 2008¹²⁶, only one third is directed to sanitation even though far greater efforts are needed in the latter sector.¹²⁷ Alarming, as at 2010 the median reported government spending on sanitation and drinking-water was only 0.48% of GDP, and countries have generally not developed or applied criteria for the distribution of funding to unserved populations, especially with respect to sanitation.¹²⁸

¹²⁰ *Id.*

¹²¹ *Id.*

¹²² Only five countries have so far reached the internationally agreed target for development aid of 0.7 per cent of Gross National Income (GNI). Despite the G-8 pledge in Gleneagles in 2005 to double aid to Africa by 2010 and increase aid by \$48 billion over 2004 levels, disbursements to Africa increased by only 2 per cent between 2005 and 2006, and national aid budget plans for 2010 indicate that only \$27 billion in additional aid has been allocated, leaving a shortfall of \$21 billion. Certain donors have lifted their game, and aid is likely to increase by 35 per cent in 2010 compared with the amounts in 2004. But the overall performance of donors has fallen significantly short of 2005 promises, and the 2008/9 global economic and financial crises have put additional pressures on Foreign Direct Investment and private financial flows. OECD, “Donors’ mixed aid performance for 2010 sparks concern,” Feb. 17, 2010, at

http://www.oecd.org/document/20/0,3343,en_2649_34447_44617556_1_1_1_37413,00.html.

¹²³ Sakiko Fukuda-Parr, “Are the MDGs Priority in Development Strategies and Aid Programmes? Only Few Are!” International Poverty Centre, Working Paper No. 48 (October 2008), pp.2 and 8.

¹²⁴ Andreas Lindström, Jakob Granit, Stockholm International Water Institute, (2009) “Climate Change and Water Resource Policies among Major Donor Organization”. The assessed agencies were: DANIDA, DFID, DGIS, GTZ, SDS, and USAID.

¹²⁵ WHO, *UN-Water Global Annual Assessment of Sanitation and Drinking Water: Targeting Resources for Better Results* (2010) [hereinafter GLAAS 2010], at p.7.

¹²⁶ ODA consists of grants or loans to developing countries which are undertaken by the official sector on concessional financial terms with the main objective of promoting economic development and welfare. See OECD-Development Cooperation Directorate (DAC), Glossary, available at http://www.oecd.org/glossary/0,3414,en_2649_33721_1965693_1_1_1_1,00.html#1965586.

¹²⁷ GLAAS 2010, *above* note 126, at p.28.

¹²⁸ GLAAS 2010, *Id.*, at p.7.

The failure by donor and partner countries to accord sufficient priority to water and sanitation is accentuated by the lack of any platform to hold donor and partner countries accountable for their commitments.¹²⁹ The “Sanitation and Water for All” initiative is an international partnership of national governments, donors, civil society organisations and other partners working to address this problem, and galvanise political commitment to increase global access to water and sanitation.¹³⁰ Sanitation and Water for All is intended to provide capacity building support for strong, actionable national plans with implementation strategies, improved data and analysis on sanitation and water supply sector for decision-making, mutual accountability between aid agencies and partner governments (and between governments and their people), and better targeting and mobilisation of funding. “Sanitation and Water for All” aims to ensure that no credible national plan should fail for lack of finance.¹³¹ The strong civil society mobilisation and participation in the Sanitation and Water for All initiative is a noteworthy feature from a human rights standpoint.

While the scope of Sanitation and Water for All is presently limited, in the view of the Independent Expert, efforts should be made to integrate NAPAs in the water and sanitation sectors with donor-supported national plans, to the benefit of policy coherence, administrative efficiency, and to reflect the aid effectiveness and participation principles embodied in the “Sanitation and Water for All” concept. Donor states and countries receiving development assistance should ensure that ODA is used in ways that are fully consistent with human rights principles and standards, including the rights to water and sanitation. As such, they must ensure that ODA respects all human rights and supports efforts to identify and address human rights violations and discrimination, including gender discrimination and inequality. Within the framework of progressive realisation towards the goal of universal access, donor and partner countries should prioritise the fulfilment of States’ minimum core obligations with particular regard to the most marginalised communities and populations. They should also ensure that there is full transparency and access to information on the use of ODA and full and meaningful participation of all relevant stakeholders, including affected communities, in the use of ODA.

The private sector and technology policy

As indicated earlier, if poorer countries are to be expected to shoulder their share of the global burden of GHG emissions reductions, they will need to be on a transition path to low carbon economies by 2025, with steep reductions thereafter. An effective global deal therefore requires that all countries have access to inexpensive low-carbon technologies, in order to ensure sufficient clean energy for economic growth, which in turn is necessary (although by no means sufficient) for poverty reduction and generating resources to realise human rights. In order to enhance action on development and transfer of technology, participating States at the COP 15 in Copenhagen decided to establish a “Technology Mechanism” which will aim to “accelerate technology development and transfer in support of action on adaptation and mitigation that will be guided by a country-driven approach and be based on national circumstances and priorities.”¹³²

¹²⁹ UNDP, Human Development Report 2006, *above* note 16, p. 70.

¹³⁰ For the outcome of the First High Level Meeting of the Sanitation and Water For All initiative in April 2010, see http://www.unicef.org/media/media_53444.html.

¹³¹ Sanitation and Water for All, Briefing Note (March 2010), *available at* <http://www.unwater.org/downloads/s4aSWAConceNote-En.pdf>.

¹³² Copenhagen Accord, *above* note 96, para. 11.

Any comprehensive and effective approach to climate change policy must necessarily include an active role for the private sector. Transnational corporations including fossil fuel and agribusiness industries have grown enormously in their economic and political influence in both richer and poorer countries. Corporations are often major users and providers of water services, and many of them bear a significant degree of direct responsibility for GHG emissions. Governments have the primary role in regulating for human rights protection and realisation and in creating incentives for climate action (through subsidies, taxes, caps, or regulations), providing information and education, and correcting market failures. However much of the needed finance will come from the private sector, particularly for adaptation, along with technological innovation.¹³³ Strategies to engage the private sector towards these ends should take account of the legal and policy framework emerging under the mandate of the Special Representative of the UN Secretary General (SRSG) on Business and Human Rights, John Ruggie,¹³⁴ including proposed “guiding principles” on business and human rights envisaged for 2010, as well as specific research priorities concerning the role of business in relation to the right to water.¹³⁵

On technology policy more specifically, water can be used more efficiently through a combination of new and existing technologies, better information, and more sensible use. Improving the resilience of water and sanitation infrastructure to flooding and drought requires new approaches and innovative technologies, sufficient infrastructure investments, capacity development, and technology transfer. While low-cost local technologies should be prioritised, new technologies may be required for adaptation purposes in areas such as water storage and conservation, recycling, desalination, improved irrigation, and nanotechnology for water purification, wastewater treatment and monitoring.¹³⁶ Analysis of technology needs in the water and sanitation sectors should take full account of the root causes of lack of access, including barriers related to the structure of the relevant technology markets, the pricing and technology transfer models, as well as political or ideological barriers.¹³⁷ There is also an urgent research agenda around issues of technology transfer, climate change and human rights (including the rights to water and sanitation), mapping and analysing the international human rights, intellectual property, trade and investment legal regimes in order to identify areas of congruence as well as potential conflict. The latter endeavour is a critical prerequisite to ensuring that COP negotiating parties – richer and poorer countries alike – may be able to

¹³³ WDR 2010, *above* note 120, at 24.

¹³⁴ See United Nations High Commissioner for Human Rights, *Special Representative of the Secretary-General on human rights and transnational corporations and other business enterprises* (June 18, 2008), available at http://www2.ohchr.org/english/issues/trans_corporations/index.htm; and Report of the Special Representative of the Secretary-General on human rights and transnational corporations and other business enterprises, *Business and human rights: Further steps towards the operationalisation of the “protect, respect and remedy” framework*, U.N. Doc. A/HRC/14/27, 9 April 2010.

¹³⁵ For suggested priorities and orientations for research see Institute for Human Rights and Business, “Business, Human Rights and the Right to Water: Challenges, Dilemmas and Opportunities,” Consultation report (draft), January 2009, available at http://www.institutehrb.org/pdf/Draft_Report-Business_Human_Rights_and_Water.pdf.

¹³⁶ WDR 2010, *above* note 120, at 17-18; IPCC Technical Paper IV, *above* note 3, at 46; and UNWWDR 2009, *above* note 16, at 45. For technology-related needs relating to climate change adaptation in the water sector see FRANK VAN STEENBERGEN & ALBERT TUINHOF, *MANAGING THE WATER BUFFER FOR DEVELOPMENT AND CLIMATE CHANGE ADAPTATION: GROUNDWATER RECHARGE, RETENTION, REUSE AND RAINWATER STORAGE* (2009); and also FULCO LUDWIG, PAVEL KABAT, HENK VAN SCHAIK & MICHAEL VAN DER VALK, *CLIMATE CHANGE ADAPTATION IN THE WATER SECTOR* (2009).

¹³⁷ For fuller discussion of such factors in the health sector, by analogy, see Musungu, Sisule F., *Health: Human Rights, Climate Vulnerability and Access to Technology*, Background Paper (draft), International Council on Human Rights Policy (July 2009).

interpret these various regimes in good faith and in a manner that gives rise to a mutually compatible set of obligations, for the benefit of legal and policy coherence.¹³⁸

Procedural rights: strengthening transparency, participation and accountability

Among the most important ways in which the international human rights framework can strengthen climate change policy-making, is through the application of “process” guarantees concerning access to adequate information, transparency, broad-based participation and accountability in policy-making. These elements are closely related in practice: active and informed participation and effective accountability (including redress for human rights violations) are unachievable without adequate, relevant, accessible and timely sources of information. Environmental impact assessments are discussed separately below as a distinctive normative and operational framework through which procedural rights are commonly exercised, although analytically the close linkages with transparency, participation and accountability are evident.

Procedural rights are a relatively well established feature within the lexicon of international environmental law, originally enshrined in Principle 10 of the 1992 Rio Declaration: “Environmental issues are best handled with the participation of all concerned citizens ... At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.”¹³⁹ These principles were reinforced in the 1998 Aarhus Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters [*hereinafter*, Aarhus Convention].¹⁴⁰ Procedural rights are also an integral part of the normative structure of the human rights to water and sanitation, as elaborated by the CESCR and the Independent Expert, respectively, as will be seen below.

Procedural rights assume particular urgency and salience in the context of climate change, where the counter-incentives to effective mitigation responses, in particular, are so deeply entrenched. For example, environmental groups have succeeded in mobilising to block the construction of coal-fired power plants in certain industrialised countries.¹⁴¹ The world’s largest ever coordinated protest rally (known as “350.org”, referring to the upper limit of CO₂ gas in the atmosphere deemed safe by mainstream science) took place in October 2010, involving 5,200 protests in 181 countries. These protests were designed to put pressure on governments to reach a binding agreement on GHG emissions at COP 15 in Copenhagen, and

¹³⁸ Above, note 43 and accompanying text. On the role of technology policy and intellectual property rights in the climate change context see WESS 2009, above note 114 at 123-36. The problem of legal fragmentation, framed within the theory of systemic integration, is among the topics being investigated within the International Council on Human Rights Policy’s project: “Climate Change: Technology Policy and Human Rights” (report forthcoming 2010). See Center for International Environmental Law, *Technology Transfer in the UNFCCC and Other International Legal Regimes: The Challenge of Systemic Integration*, Background Paper, International Council on Human Rights Policy Review Meeting, 9-10 (July 2009).

¹³⁹ United Nations Conference on Environment and Development, June 3-14, 1992, *Report Annex I: Rio Declaration on Environment and Development*, U.N. Doc A/CONF.151/26/Rev.1 (Aug. 12, 1992).

¹⁴⁰ 38 I.L.M. 517 (June 25, 1998), available at <http://www.unece.org/env/pp/documents/cep43e.pdf>. While concluded in Europe, the Aarhus Convention is open for signature to all States. As at November 2009 there were 44 States parties to the convention. See <http://www.unece.org/env/pp/ratification.htm>.

¹⁴¹ Bill McKibben, *Heavy Weather in Copenhagen*, Vol. LVII(4) N.Y. REV. BOOKS 32, 34 (2010).

were often undertaken at considerable personal risk to the individual participants.¹⁴² In the view of the Independent Expert, strengthened civil society mobilisation will be all the more critical to secure the agreement and implementation of meaningful mitigation, adaptation, financing and technology policy commitments relevant to water and sanitation. This in turn requires accurate, timely and accessible information and more widespread and effective commitments to freedom of expression and association.

O Transparency and access to information

Rights to access to information are well established in international environment instruments, including in relation to climate change. Beyond the Rio Declaration and Aarhus Convention, mentioned above, article 6(a)(ii) of the UNFCCC requires States to “promote and facilitate at the national and, as appropriate, at sub-regional and regional levels, ... public access to information on climate change and its effects.” The UNFCCC and Kyoto Protocol go further to specify required means of communication of information, as well as specific subjects including sources of GHG emissions, emissions trading, technology transfer, finance and other policies and steps taken by the State party to implement the convention.¹⁴³ Transparency nevertheless proved a controversial topic in the COP 15 negotiations, with certain emitting States going as far as suggesting that strong transparency requirements and independent emissions reduction verification procedures might abridge national sovereignty.¹⁴⁴

The right of access to information, with certain important qualifications, is also well known in international human rights law. Under article 19(2) of the ICCPR, the freedom of expression includes “the freedom to seek, receive and impart information and ideas of all kinds.” Regional human rights treaties contain similar guarantees.¹⁴⁵ This does not translate to a free-standing and open-ended human right to access to information, however. The same is true under many national freedom of information laws, which generally do not go further than establishing the right of the general public to receive on request information already held by public authorities.¹⁴⁶

In the view of the CESCR, information accessibility in relation to the human right to water includes the right to seek, receive and impart information concerning water issues. The national water strategy and plan of action should be based upon “good governance” principles including transparency, and individuals and groups should be given full and equal access to information concerning water, water services and the environment, held by public authorities or third parties.¹⁴⁷ Similar, in relation to the human right to sanitation, States are obliged to ensure that concerned individuals and communities are informed and have “full and equal” access to information about sanitation and hygiene and their effect on health and the environment. More specifically, “[i]nformation should be made available through various

¹⁴² *Id.*, at 32.

¹⁴³ UNFCCC article 12, and Kyoto Protocol, articles 7 and 12. These provisions and national actions to enforce compliance are discussed in Svitlana Kravchenko, *Procedural Rights as a Crucial Tool to Combat Climate Change*, 38(3) GEO. J. INT’L & COMP. L. (forthcoming 2010).

¹⁴⁴ Jim Tankersley, U.S., *China concessions give climate talks a big boost*, L.A. TIMES (18 Dec., 2009), available at <http://articles.latimes.com/2009/dec/18/world/la-fg-climatetalks18-2009dec18> (reporting China’s stated hesitancy to agree to transparency commitments in light of national sovereignty concerns).

¹⁴⁵ See European Convention for the Protection of Human Rights and Fundamental Freedoms, 213 U.N.T.S. 221 (1950) [*hereinafter* ECHR], article 10; American Convention on Human Rights, 1144 U.N.T.S. 144 (1969), article 13; and African Charter on Human and People’s Rights, 1520 U.N.T.S. 217 (1981), article 9.

¹⁴⁶ International, regional and national standards and jurisprudence concerning freedom of access to information as an aspect of freedom of expression are discussed in Kravchenko, *above* note 144.

¹⁴⁷ CESCR, General Comment 15, para. 12(c)(iv) & 48-9.

media and should be translated in all relevant languages and dialects to ensure the greatest possible circulation.”¹⁴⁸

The Aarhus Convention goes further than the generally accepted bounds of international human rights law, setting forth a comparatively detailed and proactive set of requirements for the regular and widespread dissemination of accessible and updated information on environmental risks.¹⁴⁹ Moreover article 3(7) of the Aarhus Convention specifies that the principles in the convention shall be promoted in international environmental decision-making processes and negotiations. More specific requirements in this regard were elaborated by the conference of the parties in 2005, resulting in the Almaty Principles on Promoting the Application of the Principles of the Aarhus Convention in International Forums [*hereinafter* Almaty Principles].¹⁵⁰ However neither article 3(7) of the Aarhus Convention nor the Almaty Principles appear to have had any appreciable impact within the framework of the UNFCCC negotiations to date, nor in relation to climate-related projects and funds administered by the World Bank, the decision-making of which is still disproportionately influenced by its largest shareholders.¹⁵¹

The inadequacy of the data actually collected in the water and sanitation sectors at national level is also a matter of serious concern. This not only limits effective measurement of the adverse impacts of climate change upon the availability and quality of water and sanitation services, but also undermines human rights monitoring and development planning more generally. The WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP) is the official United Nations mechanism tasked with monitoring progress towards the MDG drinking water and sanitation target. The JMP publishes 2-yearly estimates on the various types of drinking water sources and sanitation facilities being used worldwide, drawing data from national household surveys and censuses. In line with the MDG Goal 7, target C indicator definition of “use of improved facilities”, the JMP reports on estimated “use” of facilities rather than “access,” since not all people who have access to improved sources actually use them.¹⁵² However household surveys and JMP reporting do not specifically capture the safety of drinking water (rather, the “improved” criterion serves as a proxy for safety), nor affordability nor reliability.¹⁵³ There is also little if any data available to enable assessments of equity issues and discrimination in access, beyond rural and urban disparities.

In the view of the independent expert, it would be critical to supplement the traditional data sources used by the JMP with additional data sets that relate specifically to certain of the key human rights obligations relating to water and sanitation, as discussed earlier. This would

¹⁴⁸ U.N. Doc. A/HRC/12/14 (2009), *above* note 20, para. 66.

¹⁴⁹ Aarhus Convention, article 5.

¹⁵⁰ U.N. Doc. ECE/MP.PP/2005/2/Add.5 (20 June, 2005), *available at* <http://www.unece.org/env/documents/2005/pp/ece/ece.mp.pp.2005.2.add.5.e.pdf>. Paragraphs 19-27 of the Almaty Principles deal with access to information, making clear the proactive nature of the duties involved, and the presumption in favour of disclosure.

¹⁵¹ Humphreys, *above* note 99 at 310-11.

¹⁵² The methodological assumptions and process for the JMP’s coverage estimations are set out in WHO/UNICEF, “Joint Monitoring Programme for Water Supply and Sanitation: Policies and Procedures,” Version 4 (April 2004), *available at* http://www.wssinfo.org/pdf/Policies_Procedures_04.pdf; and JMP 2010 at pp.34-36.

¹⁵³ For a discussion of some of these limitations in existing survey methods and household datasets, along with pilot initiatives to address them, see WHO & UNICEF, “Meeting the MDG Drinking Water and Sanitation Target: The Urban and Rural Challenge of the Decade” (2006), pages 22-24, *available at* http://www.wssinfo.org/pdf/JMP_06.pdf.

represent a critical contribution to policy-making in the relevant sectors, as well as provide a vital bridge to more effective human rights monitoring. The specific criteria that should be prioritised for inclusion are availability, safety, accessibility, affordability and reliability (or continuity). Disaggregation according to gender should be prioritised, at a minimum, in view of the particular challenges, vulnerabilities and discrimination faced by women and girls in these sectors, along with disaggregation according to richest and poorest quintile. This might be viewed as a considerable opportunity cost, to the extent that these funds could otherwise be dedicated to water or sanitation programmes, MDG pilot initiatives, or national or sectoral budgets directly. But in the view of the independent expert, the “opportunity” far outweighs the “cost,” not only in terms of the added value for focusing interventions on key bottlenecks and informing policy-making in the water and sanitation sectors, but also the very substantial knock-on effects this would bring for health, education, gender equality, education, nutrition, economic growth and poverty reduction.

- a) States should make information widely available in a range of languages and accessible formats, insofar as the implications of climate change for water and sanitation are concerned, and States should provide non-technical summaries of key documents as well as descriptions of policy alternatives;
- b) Domestic freedom of information principles should be interpreted in line with the requirements of international human rights and environmental law, with a strong presumption in favour of disclosure, and narrow interpretation of any legitimate exemptions;
- c) Freedom of information principles should be applied equally in relation to international negotiations under the auspices of the UNFCCC, as well as to climate funds and projects administered by the World Bank, insofar as issues and threats relating to the human rights to water and sanitation are concerned;
- d) States which have not yet ratified the Aarhus Convention should be encouraged to do so, ensuring that its principles are applied in both the domestic and international spheres;
- e) States should strive to include strengthened MRV (measurement, reporting and verification) requirements in negotiations towards a post-Kyoto climate change agreement at COP 16 and beyond, embracing both developed and developing country mitigation actions, and highlighting any mitigation policies or actions with particular implications for the realisation of the human rights to water and sanitation;
- f) States should ensure that reliable data relating to the realisation of the human rights to water and sanitation is collected on a comprehensive and regular basis, and is used to inform climate change policy-making as well as periodic reporting under ratified international human rights treaties, including data on the adequacy, safety, affordability and continuity or regularity of water supply, and the safety, affordability and cultural acceptability of sanitation facilities;
- g) States should ensure that data is disaggregated by reference to excluded groups of people and underserved areas, with a particular focus on gender, urban and rural disparities and upper and lower income quintiles, at a minimum, along with the prohibited grounds of discrimination under the international human rights treaties in accordance with national needs and capacities.

O Participation

The principle of active and informed participation under human rights law is intended to ensure that participation is inclusive and empowering (rather than a technocratic or tokenistic exercise or, in the context of delivery of water services, a euphemism for cheap labour), particularly for the most disadvantaged and vulnerable groups.¹⁵⁴ In the view of the CESCR, regulatory systems for water services (part of the State's obligation to "protect" the right to water) should include independent monitoring, genuine public participation and imposition of penalties for non-compliance. Moreover "[t]he right of individuals and groups to participate in decision-making processes that may affect their exercise of the right to water must be an integral part of any policy, programme or strategy concerning water."¹⁵⁵

Similarly, according to the Independent Expert: "States are also obliged to ensure that concerned individuals and communities are informed and have access to information about sanitation and hygiene and are enabled to participate in all processes related to the planning, construction, maintenance and monitoring of sanitation services. Full participation, including representatives of all concerned groups is key to ensuring that sanitation solutions answer the actual needs of communities and are affordable, technically feasible, and culturally acceptable. Participation is also crucial for achieving community ownership and dedication in order to bring about the required behavioural changes."¹⁵⁶

Participatory rights are important as a matter of principle, and from a purely instrumental perspective participation may furnish critical inputs to decision-making processes as well as enhance the legitimacy and sustainability of outcomes. This need is indispensable in the view of the complexity and dynamism of decision-making on climate change issues, as the World Bank has recognised: "Decision makers now have to contend with the changing climate compounding the uncertainties they already faced. More decisions have to be made in a context of changing trends and greater variability, not to mention possible carbon constraints. ... Participatory design and implementation is critical, because it permits the use of local knowledge about existing vulnerability and fosters ownership of the strategy by its beneficiaries."¹⁵⁷

The Aarhus Convention sets out an extensive catalogue of requirements concerning participation in regard to all decisions on whether to permit activities which may have a significant impact on the environment. The Aarhus Convention requires proactive, timely and informed participation, with explicit obligations to take the public's views into account. The public must have access to all relevant information on the proposed activities including among other things a description of environmental impacts, measures to prevent or mitigate adverse impacts, a non-technical summary of documents, and an outline of main alternatives.¹⁵⁸

In the context of climate change more specifically, Article 4(1)(I) of the UNFCCC encourages States parties to ensure "the widest possible participation" in climate decision-making, "including that of non-government organisations." Article 6(a) further provides that parties shall "promote and facilitate at the national and, as appropriate, subregional and regional

¹⁵⁴ OHCHR, CLAIMING THE MDGs (2008); COHRE, *above* note 110, at 6.

¹⁵⁵ CESCR, General Comment 15, paras. 24 & 48.

¹⁵⁶ U.N. Doc. A/HRC/12/24 (2009) at para. 66.

¹⁵⁷ WDR 2010, *above* note 120, at 18.

¹⁵⁸ Aarhus Convention, *above* note 141, articles 6-8.

levels, and in accordance with national laws and regulations, and within their respective capacities,” the public’s access to information and public participation.

Critically, paragraph 15 of the Almaty Guidelines stresses the importance of capacity-building and positive measures to ensure equal and effective participation: “Where members of the public have differentiated capacity, resources, socio-cultural circumstances or economic or political influence, special measures should be taken to ensure a balanced and equitable process. Processes and mechanisms for international access should be designed to promote transparency, minimize inequality, avoid the exercise of undue economic or political influence, and facilitate the participation of those constituencies that are most directly affected and might not have the means for participation without encouragement and support.”

The barriers to effective participation in climate change policy-making are particularly troubling in view of the technical complexity of climate science and policy. Poorer countries can often afford to bring only a few delegates to climate negotiations, “where wealthy countries field hundreds.”¹⁵⁹ Where critical issues regarding the human rights to water and sanitation are implicated, very few national delegations can be expected to bring the requisite expertise. These problems are compounded by the nature and scale of the economic stakes and political interests typically involved in climate decision-making, which were among the factors which resulted in the Copenhagen Accord being decided by a small group of powerful countries behind closed doors. Indeed, in response to vigorous advocacy by Small Island States at COP 15 for the “350ppm” CO₂ target, there appear to be increased risks that weaker and poorer (and frequently, more vulnerable) countries may be further sidelined from international negotiations in future. As one of the leading industrialised country negotiators has remarked, the U.N. might not be accepted by more powerful countries as the best forum to negotiate a climate change accord because “a lot of attention to detail can be focused on ideas that are not really tethered to reality.”¹⁶⁰ The irony and injustice of exclusion were well captured by one critic: “Instead of small angry nations going on about their survival, the direction of climate policy will be determined at what amounts to an AA [Alcoholics Anonymous] meeting for still-active coal and oil drunks ... who at the moment are making very vague promises about reducing their consumption a decade or two down the road.”¹⁶¹

Barriers to effective participation in climate policy are equally pronounced at the national level, where decision-making is often dominated by elite interests and rigid economic modelling, without sufficient regard to precautionary approaches and the broader public interest. The World Bank’s “World Development Report” team has argued for a flexible and precautionary approach to policy-making that transcends the perceived limitations of economic modelling. A wider and more heterodox range of voices is required in order to challenge dominant assumptions and create space for policy alternatives. This would have potentially significant implications for the water sector, as the World Development Report illustrates in connection with climate change adaptation policy:

The approaches [to climate adaptation decision-making] being developed and applied by public and private agencies, cities, and countries around the world are showing that it is possible to increase resilience even in the absence of expensive and sophisticated modelling of future climate. Of course better projections and less uncertainty help, but these new approaches tend to focus on strategies that

¹⁵⁹ Humphreys, *above* note 99 at 310.

¹⁶⁰ McKibben, *above* note 142 at 33, quoting U.S. negotiator Todd Stern.

¹⁶¹ *Id.*, at 33-4.

are ‘robust’ across a range of possible future outcomes, not just optimal for a particular set of expectations. ...Robust strategies typically build flexibility, diversification, and redundancy in response capacities. They favor ‘no-regrets’ actions that provide benefits (such as water and energy efficiency) even without climate change. They also favour reversible and flexible options to keep the cost of wrong decisions as low as possible (restrictive urban planning for coastal areas can easily be relaxed while forced retreats or increased protection can be difficult and costly). They include safety margins to increase resilience (paying the marginal costs of building a higher bridge or one that can be flooded, or extending safety nets to groups on the brink). And they rely on long-term planning based on scenario analysis and an assessment of strategies under a wide range of possible futures.¹⁶²

The Independent Expert recommends the following:

- a) States should ensure the active, free, and meaningful participation of, rights-holders and other relevant stakeholders in the formulation, implementation, monitoring and evaluation of climate policy at national and international levels, insofar as the human rights to water and sanitation may be impacted thereby;
- b) The complexity, dynamism and high stakes involved in climate decision-making place a particularly high onus on decision-makers to ensure timely and meaningful participation throughout key decision-making processes, particularly for those whose rights (including the rights to water and sanitation) appear most directly threatened. This calls for a precautionary approach to decision-making, and for decision-makers at national and international levels to be held to account for the timeliness and quality of participatory processes, which at a minimum should require the publication of the outcomes of participation and the respects in which various stakeholders were or were not taken into account, along with statements of reasons;
- c) States should ensure that the processes for participation in connection with climate policy at the national level transcend *ad hoc* mechanisms for particular programmes or projects, but rather are specifically planned, financed and implemented as far as possible within the framework of existing democratic institutions and decision-making structures, in order to strengthen broad-based national ownership of national policies on climate, water and sanitation, and foster and deepen democratic culture;
- d) States should establish clear agreed minimum standards for participation and develop appropriate capacity development strategies in order to help make participation effective, including public officials; service delivery organisations; technical specialists in climate science and policy, water and sanitation; civil society organisations concerned with water and sanitation; community based organisations; and national human rights institutions and experts;
- e) Member States, the UNFCCC and other concerned international organisations should aim to level the playing field in international climate change negotiations by dedicating technical assistance, on request, to developing country delegations (particularly those of LDCs and Small Island States) in fields including the water and sanitation sectors, in order that the latter may participate on a more equal footing with other States and more effectively safeguard the human rights to water and sanitation in climate policy.¹⁶³

¹⁶² WDR 2010, *above* note 120, at 18.

¹⁶³ A fuller range of recommendations to enhance participation in international environmental negotiations is contained in the Almaty Principles, *above* note 151, paras. 28-39.

O Integrated climate change and human rights impact assessments

The requirement for climate change impact assessments in the context of the right to water is specifically acknowledged in General Comment No. 15.¹⁶⁴ The Independent Expert has recommended that States regularly monitor the impact of policy reforms relating to the human right to sanitation.¹⁶⁵

The “do no harm” (or more specifically, “do no significant transboundary harm”) principle is among the few international obligations with widespread support under customary environmental law as well as human rights law. Environmental Impact Assessments (EIA’s) are viewed by many as compulsory under general principles of international law, regional customary law in Europe, as well as, arguably, emerging global administrative law.¹⁶⁶ *Ex ante* impact assessments of the rights to water and sanitation, integrated within environmental assessments,¹⁶⁷ could help decision-makers and negotiators to identify in a more reliable, systematic and timely fashion the likely winners and losers of any proposed policy measure at the national or global level, as an operational expression of the “do no harm” principle. An integrated EIA including an assessment of climate change policy measures on the rights to water and sanitation offers a potentially useful means to ensure that significant policy measures respect a given state’s obligations under ratified human rights treaties as well as the UNFCCC and (as appropriate) Kyoto, promoting policy coherence as well as generating compatible interpretations of the legal obligations under the respective treaty regimes.

Human rights law does not go to great lengths in spelling out the specific operational implications of an integrated human rights and climate change impact assessment.¹⁶⁸ However in the view of the Independent Expert such assessments should: (a) incorporate the human rights to water and sanitation, along with other applicable sources of law from national and regional levels, within the substantive focus and criteria for the assessment; (b) identify indicators for the assessment that are consistent with relevant human rights standards; (c) focus upon people who are most excluded and marginalized along with responsible actors (not necessarily limited to organs of the state), drawing conclusions in terms of impact on the enjoyment of the rights to water and sanitation and fulfilment of corresponding obligations; (d) strive to ensure that the assessment, as far as possible, contributes to building the capacities of relevant national stakeholders (that is to say, identifiable “rights holders” and “duty bearers”); (e) ensure that the process of carrying out the assessment respects “good process” principles such as those outlined earlier; and (f) seek to involve human rights

¹⁶⁴ CESCR, General Comment No. 15, *above* note 1, para. 28(e) provides: “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: ... (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...”

¹⁶⁵ U.N. Doc. A/HRC/12/24 (2009), *above* note 20, at para. 81(j).

¹⁶⁶ See Aarhus Convention, *above* note 141; Ole W. Pedersen, *European Environmental Human Rights and Environmental Rights: A Long Time Coming?*, 21 GEO. INT’L ENVTL. L. REV. 73, 104-9 (2008); and Benedict Kingsbury et. al., *The Emergence of Global Administrative Law*, 68 L. & CONTEMP. PROB. 15 (2005).

¹⁶⁷ For an argument for integrating human rights and environmental impact assessments see Gauthier de Boco, *Human Rights Impact Assessments*, 27(2) NETH. Q. HUM. RTS. 139 (2009).

¹⁶⁸ For a current survey of comparative jurisprudence on EIA’s and their implications for climate change and human rights, see Kravchenko, *above* note 144.

mechanisms and actors as far as possible, for example national human rights institutions, subject to their mandated functions and capacities.¹⁶⁹

o Accountability and redress

Whatever the eventual outcomes of a particular negotiation or policy-making process, the human rights legal framework urges that effective and accessible redress mechanisms be in place to ensure that those whose human rights were overlooked or traded-off against other interests are adequately compensated. General Comment No. 15 provides that “[a]ny persons or groups who have been denied their right to water should have access to effective judicial or other appropriate remedies at both national and international levels.”¹⁷⁰ Administrative remedies must be considered along with judicial remedies, as the CESCR has recognised: “The right to an effective remedy need not be interpreted as always requiring a judicial remedy. Administrative remedies will, in many cases, be adequate and those living within the jurisdiction of a State Party have a legitimate expectation, based on the principle of good faith, that all administrative authorities will take account of the requirements of the Covenant in their decision-making. Any such administrative remedies should be accessible, affordable, timely and effective.”¹⁷¹

Similar requirements apply in relation to the human right to sanitation. As the Independent Expert has elaborated, “States and other relevant actors should monitor changes over time to gauge the effectiveness of interventions and the impact of policy reforms and investments at the national and subnational levels.” Monitoring and accountability systems should be “effective, transparent and accessible,” with power to hold to account “all relevant public and private actors.” Human rights treaty bodies and special procedures should also take account of the human right to sanitation.¹⁷²

Rights to administrative and judicial review of environmental decision-making are set out in article 9 of the Aarhus Convention, reflecting relatively permissive requirements for standing (subject to national laws), with remedies required to be “adequate and effective,” including injunctive relief as appropriate, as well as “fair, equitable, timely and not prohibitively expensive.” States parties are required to provide information to the public on access to administrative and judicial review procedures and “shall consider the establishment of appropriate assistance mechanisms to remove or reduce financial and other barriers to access to justice.”¹⁷³

The Almaty Principles do not contain much guidance on accountability and redress in the context of international environmental negotiations. In one short section entitled “Review Procedures in Environmental Matters,” there is a single provision, article 40, which provides: “Each Party should encourage the consideration in international forums of measures to facilitate public access to review procedures relating to any application of the rules and

¹⁶⁹ For an illustrative account of human rights impact assessment methodology in the context of trade policy assessments surveying the wider field of social and human rights-impact assessments in the development field, see SIMON WALKER, *THE FUTURE OF HUMAN RIGHTS IMPACT ASSESSMENT OF TRADE AGREEMENTS* (2009).

¹⁷⁰ The right to a remedy is a fundamental prerequisite of international human rights law, embodied in General Comment No. 15, at para. 55. See also Aarhus Convention, *above* note 141, and Principle 10 of the Rio Declaration, *above* note 140. The latter states: “Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided[,]” in respect of environmental harms.

¹⁷¹ CESCR, General Comment No. 9, *The Domestic Application of the Covenant*, E/C.12/1998/24, Dec. 3, 1998 at para. 9.

¹⁷² U.N. Doc. A/HRC/12/24 (2009) at para. 81(j).

¹⁷³ Aarhus Convention, article 9.

standards of each forum regarding access to information and public participation within the scope of these guidelines.” This may be symptomatic of democratic accountability deficits on the international plane more widely.

The system of accountability in the climate change regime is in a state of flux following COP 15, as was noted previously. Accountability has been promoted to date through periodic reporting on GHG emissions and implementation measures, with so-called “Annex I” (“developed”) countries also agreeing to binding emissions reduction targets. A “subsidiary body for implementation,” comprising government representatives of States parties, was established under article 10 of the UNFCCC to oversee implementation. States self-report on compliance with their commitments under the UNFCCC and Kyoto Protocol through so-called “National Communications”, wherein Annex I countries are required to report on emissions and mitigation measures, but not necessarily on adverse impacts of climate change and mitigation policies themselves. Non-Annex I countries, on the other hand, are asked to report more explicitly on adverse impacts on climate change, however little guidance is given as to how vulnerability assessments – including in relation to water and sanitation – should be carried out.¹⁷⁴ The UNFCCC and Kyoto National Communications process can be seen as analogous to the human rights treaty periodic reporting process, although several of the latter instruments now include optional individual complaint (or “communication”) procedures. The oversight mechanisms of the UNFCCC and Kyoto regimes are less independent than international and regional human rights mechanisms, although there are serious accountability gaps in both regimes.

The requirement for effective remedies assumes particular importance in the context of climate change decision-making, as a counter-weight to the accountability deficit among duty-bearers at the global level (particularly in relation to States and corporations responsible for the greatest GHG emissions) and the political impasse in the negotiations under COP auspices. The global and national dimensions of accountability are equally important: “International regimes influence national policies but are themselves a product of domestic factors. Political norms, governance structures, and vested interests drive the translation of international law into domestic policy, while shaping the international regime. And in the absence of a global enforcement mechanism, the incentives for meeting global commitments are domestic.”¹⁷⁵

The U.N. Human Rights Council was actively seized with the question of climate change and human rights leading up to COP 15, although issues relating to climate change and the rights to water and sanitation have not yet permeated the Universal Periodic Review (UPR) process. A number of Special Procedures have also begun to explore the relevance of climate change to particular human rights, including those dealing with the rights to food and adequate housing. These initiatives are important in terms of helping to bridge the accountability gaps within the climate change regime, ushering a focus on accountability for climate-related harms to actual individuals and communities. However they must be seen in tandem with strengthened accountability mechanisms at the regional and national levels. While the results to date from litigating climate change claims are mixed,¹⁷⁶ at best, the practical importance of

¹⁷⁴ For more extensive discussion of these mechanisms in the context of the right to food see Columbia Law School – Human Rights Institute, *Climate Change and the Right to Food: A Comprehensive Study*, Heinrich Böll Stiftung Publication Series on Ecology, Volume 8 (2009) at 16-17.

¹⁷⁵ WDR 2010, *above* note 120, at 19.

¹⁷⁶ For a discussion of the challenges and limitations of litigating human rights claims in the context of climate change see Stephen Tully, *Like Oil and Water: A Sceptical Appraisal of Climate Change and Human Rights*, 15 AUST. INT’L L. J. 213 (2008); and Eric A. Posner, *Climate Change and International Human Rights Litigation: A*

litigation as part of a safety net for those most threatened by climate events, within broader strategies for advocacy and social mobilization, should not lightly be dismissed.¹⁷⁷ Regardless of the outcome of a hypothetical right to water claim linked to climate change, a focus on specific injuries can help to build political support for action to address the impacts of climate change on the right to water, and the story-telling quality of legal cases can make climate change real and tangible in the public eye. Even unsuccessful legal claims may indirectly build pressure for policy and legislative action as well as influence corporate behaviour.¹⁷⁸ The emerging experience from litigating socio-economic rights around the world brings out the important and potentially empowering role that litigation can play, subject to certain preconditions, within broader strategies and movements for social change.¹⁷⁹

Experience to date suggests that human rights litigation is more likely to be effective at the intra-state level in the context of national adaptation imperatives, as a mechanism through which individuals and vulnerable communities might ensure that their continuing access to quality and affordable water is safeguarded and any unjust losses are compensated, and that national adaptation policy responses do not arbitrarily or unreasonably favour some groups over others. For example, by way of analogy, in the *Nigerian Gas Flaring Case*¹⁸⁰ the High Court of Nigeria held that the practice of gas flaring by Nigeria in the Niger Delta, a practice which contributed more to climate change than all other sources in Sub-Saharan Africa, violated guaranteed constitutional rights to life and dignity.¹⁸¹

In terms of envisaging a focus and strategy for public interest litigation in the future, a potentially fruitful approach may be “to challenge those actions that not only contribute to climate change globally but also to environmental degradation at the local level. Such actions include excessive pollution or mass-scale deforestation practices. A second strategy could be to examine groups that are particularly polluting – such as the fossil fuel sector or developed industrial states that disproportionately contribute to climate change – and sue them as an

Critical Appraisal, 155 U. PA. L. REV 1925 (2007) (questioning the normative basis for claims that individuals have a human right that is violated by GHG emissions, and the prospects for vindicating such rights through litigation).

¹⁷⁷ See e.g. Hari M. Osofsky, *Climate Change Litigation as Pluralist Legal Dialogue*, 26 STAN. ENVTL. L.J. 181 (2007); ADJUDICATING CLIMATE CONTROL: SUB-NATIONAL, NATIONAL AND SUPRA-NATIONAL APPROACHES (Hari M. Osofsky & William C. G. Burns eds., 2008); JOSEPH SMITH & DAVID SHEARMAN, CLIMATE CHANGE LITIGATION: ANALYSING THE LAW, SCIENTIFIC EVIDENCE & IMPACTS ON THE ENVIRONMENT, HEALTH & PROPERTY (2006); Andrew Strauss, *The Legal Option: Suing the United States in International Forums for Global Warming Emissions*, 33 ENVTL. L. REP. 10185 (2003); Svitlana Kravchenko, *Right to Carbon or Right to Life: Human Rights Approaches to Climate Change*, 9 VT. J. OF ENVTL. L. 513 (2008); and Kravchenko, *above* note 144. While not dealing directly with the rights to water and sanitation, this body of scholarship critically explores the potential for litigating climate change claims in the International Court of Justice, regional and national human rights courts, and a range of other international tribunals.

¹⁷⁸ There is at least anecdotal evidence that, at the domestic level, liability claims pertaining to environmental harm have led to changes in behavior when such claims were directed against corporations. Michael Faure & Andre Nollekaemper, *International Liability as an Instrument to Prevent and Compensate for Climate Change*, 26 STAN. ENVTL. L.J. 123, 141 (2007). Cf. Eric A. Posner & Alan O. Sykes, *An Economic Analysis of State and Individual Responsibility Under International Law*, U. Chi. L. School, John M. Olin Law and Economics Working Paper No. 279 (2006).

¹⁷⁹ See SOCIAL RIGHTS JURISPRUDENCE: EMERGING TRENDS IN INTERNATIONAL AND COMPARATIVE LAW (Malcolm Langford ed., 2009); and VARUN GAURI & DAN BRINKS, COURTING SOCIAL JUSTICE: JUDICIAL ENFORCEMENT OF SOCIAL AND ECONOMIC RIGHTS IN THE DEVELOPING WORLD (2008). For example the latter authors found (at 303) that “legalizing demand for [socio-economic] rights might well have averted tens of thousands of deaths [in the above countries] and has likely enriched the lives of millions of others.”

¹⁸⁰ *Jonah Gbemre v. Shell Petroleum Development Co. (Nigeria) Ltd. et. al.*, Unreported Suit No. FHC/B/CS/53/05 (Nov. 14, 2005) (Benin).

¹⁸¹ *Id.*

aggregated entity. Finally, it should be realized that state liability could arise not just because of the state's direct interference with human rights, but also when it fails to protect or fulfill those rights. States should be held accountable when they fail to adequately control private actors or when they encourage mitigation practices that have adverse impacts on local communities.”¹⁸²

As far as mitigation actions are concerned, tort and administrative law claims in richer countries can strengthen incentives for regulatory action to promote clean energy investment and control emissions.¹⁸³ But while legal grievance procedures are notoriously weak at global level, particular in the field of international environmental law,¹⁸⁴ international claims should not be dismissed out of hand. It is possible that as the international system becomes more highly regulated in response to the demands of globalisation, and as the adverse impacts of climate change are more widely felt, the role of litigation at the international level may evolve over time to deal as much with the concrete allocation of losses as with the raising of political consciousness.¹⁸⁵

The Independent Expert recommends the following:

- a) States should develop and support the functioning of accessible, affordable, timely and effective mechanisms of redress – including judicial, quasi-judicial and administrative mechanisms – to safeguard against violations of the human rights to water and sanitation at the national level arising from climate risks and climate change policy-making, and strengthen accountability in the formulation and implementation of water and sanitation strategies in the context of national development or poverty reduction plans, with a particular focus on the impacts of climate change;
- b) With diffuse and vulnerable victims, international and domestic courts and tribunals should adopt flexible standing rules and a broad interpretation of “interest” when harmful impacts of climate change upon humans are challenged;
- c) States and U.N. agencies, funds and programmes should give further dedicated attention to the study and support of environmental litigation at the national and regional levels insofar as the impacts of climate change upon human rights (including the rights to water and sanitation) are concerned, along with innovations and good practices in connection with administrative mechanisms and National Human Rights Institutions;
- d) Special Procedures should more actively and systematically take up the question of climate change within their mandated concerns, and human rights treaty bodies should more regularly request information from States parties on how human rights (including the human rights to water and sanitation) may be impacted within the framework of national mitigation and adaptation policies and programmes;¹⁸⁶
- e) Member States of the U.N. Human Rights Council should revise the reporting guidelines for the Universal Periodic Review (UPR) process to ensure that national

¹⁸² Columbia Law School – Human Rights Institute (2009), *above* note 175 at p. 22.

¹⁸³ See e.g. *Massachusetts v. EPA*, 549 U.S. 497 (2007).

¹⁸⁴ Martti Koskenniemi, *Breach of Treaty or Non-Compliance? Reflections on the Enforcement of the Montreal Protocol*, 3 Y.B. INT'L ENVTL. L. 123, 125-34, 136, 147 (1992).

¹⁸⁵ Strauss, *above* note 177, at 10 & 191.

¹⁸⁶ For a more extensive set of suggested actions for Special Procedures and treaty bodies in the context of climate change and the right to food, including the proposed appointment of a Special Rapporteur to the Human Rights Council on climate change and human rights, see Columbia Law School – Human Rights Institute (2009), *above* note 175 at pp.138-43.

reports address threats to the human rights to water and sanitation linked to climate change;

- f) States should adhere to the Aarhus Convention and implement its provisions in good faith, thereby laying strengthened foundations for transparency, participation and access to justice in climate change policy-making, with significant potential human rights dividends including for the rights to water and sanitation;
- g) States which have not already done so should adhere to both the ICESCR and its Optional Protocol, and recognize the competence of the CESCR to receive and consider inter-State communications and to undertake inquiries as a critical safeguard and complement to municipal legal protections and national and regional accountability systems, insofar as climate change risks to the rights to water and sanitation are concerned.

Policy coherence and inter-sectoral coordination and mobilisation

The foregoing discussion brings out the challenges inherent in addressing the human rights implications of a problem as complex and multi-faceted as climate change. Neither human rights, climate change, nor problems in the water and sanitation “sectors” more specifically, can effectively be addressed in isolation. Many of the solutions to adapting to climate change lie within the water community, and correspondingly, as we’ve seen, there are many human rights threats posed by climate change itself, as well as by climate change mitigation and adaptation measures.

Yet there are profound cleavages between climate change and human rights law and policy-making, for a range of reasons. Climate change and human rights are dominated by different disciplines: natural sciences and economics, in the case of the former, and political scientists and lawyers, in the latter case. Many representatives of poorer countries (although less evidently the poorer communities themselves) have expressed concerns about human rights being invoked in a disingenuous fashion by more powerful States as conditionalities for foreign aid. Some richer countries, in turn, appear nervous about human rights commitments being marshalled in support of arguments for legally binding obligations of international cooperation and assistance.¹⁸⁷ The international architecture within the U.N. system has evolved in an incremental fashion along specialised functional lines, as have the international legal regimes governing each. This can present serious barriers to addressing the many relevant facets of any given issue in an integrated and coherent way. Bureaucracies at the national level are also fragmented and poorly coordinated in many instances, with relevant competences for present purposes divided between ministries of the environment, finance and the economy, development, social affairs, foreign affairs, and justice. For example, the human rights implications of climate change have been an active matter of debate in the Human Rights Council in Geneva, yet all but marginal to the UNFCCC’s agenda in Bonn. Very rarely would national delegations to international climate change negotiations be equipped to bring in all necessary expertise to deal effectively with all relevant dimensions of these issues, even if there were unambiguous political will to do so.

The links between the climate, human rights, water and sanitation constituencies and professional communities therefore need to be strengthened. This should begin with education, communications and awareness-raising about the linkages between these issue

¹⁸⁷ For a more detailed analysis of the politics of human rights and climate change negotiations see Marc Limon, *Human Rights and Climate Change: Constructing a Case for Political Action*, 33 HARV. ENVTL. L. REV. 439 (2009).

areas, in order that cross-sectoral constituencies within civil society can organise more effectively and exert strengthened pressure for change. Ministries at the national level should also foster dialogue and establish the inter-departmental consultation and coordination mechanisms necessary to ensure a greater measure of policy coherence. Governments of wealthier countries should commit to helping build the requisite capacities of developing country bureaucracies and inter-sectoral technical capacities of delegations to UNFCCC negotiations. Specialised climate change and human rights bodies should make continuing efforts to work across the lines of their established competences, adapting their specialised technical capacities accordingly. Finally, human rights treaty bodies, Special Procedures, and dispute resolution bodies dealing with human rights, climate change, trade and intellectual property issues (including under WTO auspices) should approach their functions with a fuller appreciation of the substantive linkages between the specialised legal regimes governing the various issues referred to, to ensure that international law evolves in a coherent fashion and that States parties to the various treaty regimes are able – assuming the requisite political will to do so – to give effect to a mutually compatible overall set of international obligations.

E. Concluding remarks

Climate change has evolved in a very short period of time from an abstract philosophical and scientific issue, to an urgent life-saving imperative for a rapidly increasing number of people. The science behind human-induced climate change is no longer in serious dispute in peer-reviewed academic literature, however popular it might still be in some quarters to impugn it. Many of the worst predicted impacts of climate change will be mediated through water systems, compromising access to sanitation and water for personal and household uses, thereby indirectly undermining a wide range of other human rights. From this perspective, in the view of the Independent Expert, the growing recognition of the human rights to water and sanitation in international and municipal law could not be more timely.

This report has documented a range of ways in which the international human rights framework governing water and sanitation may fill important gaps in international environmental law relating to climate change. The recommendations in this paper, as outlined in the Executive Summary, might seem ambitious when one takes into account the fragile political consensus embodied in the UNFCCC and Kyoto agreements, the weighty economic and commercial interests in balance climate change burden-sharing negotiations, and the suspicions of certain Member States about the motives of human rights proponents in that context. One cannot be sanguine about the prospects for any radical re-configuration of these factors, at least in the short term, and a report such as the present one will obviously not move those whose objections to human rights spring from geo-political, ideological or baser tactical motives. But that is not an excuse for inaction.

Aside from the political differences, there are very pronounced knowledge and capacity gaps insofar as the impacts of climate change upon the human rights to water and sanitation are concerned, and what policy consequences should follow. In navigating the many conceptual, political and other challenges in climate change negotiations and policy-making, one must be guided at all times by the rights and legitimate expectations of the rights-holders themselves, particularly those who – through no fault of their own – find themselves most directly threatened. Properly understood and faithfully implemented, this is the defining and most powerful contribution of human rights law. The present report is intended as a contribution towards dispelling some of the genuinely held misconceptions about the nature and contributions of the human rights to water and sanitation, for the sake of improved equity, accountability, and coherence in climate change policy-making.