ADVANCING THE HUMAN RIGHT TO SCIENCE UNDER THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS

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ABSTRACT

At this juncture, the relevance of the human right to science is undeniable. The right, for a long time, has been a subject matter of deliberation under Article 15 of the International Covenant on Economic, Social and Cultural Rights, 1966 (ICESCR). Most of these deliberations emphasised the need for a concise meaning and scope of the right to science. In the year 2020, the Committee on Economic, Social and Cultural Rights (CESCR) under the ICESCR made two interventions with the objective of defining, advancing and mainstreaming the right to science. The two interventions include General Comment No. 25 on Science and Economic, Social and Cultural Rights, and the Statement on the Coronavirus Disease (COVID-19) Pandemic and Economic, Social and Cultural Rights. This paper concerns the above-mentioned statements of the CESCR, in particular, the interpretations and standards being advanced by the Committee.

Keywords: Science, Access, Human Rights, ICESCR, COVID-19

INTRODUCTION

The International Covenant on Economic, Social and Cultural Rights, 1966 (*hereinafter* 'ICESCR') under Article 15 provides;

" **1.** *The States Parties to the present Covenant recognise the right of everyone:*

a) To take part in cultural life;

b) To enjoy the benefits of scientific progress and its ***applications****;*

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c) To benefit from the protection of the moral and material interests resulting from any scientific, literary or artistic production of which he is the author.

2. *The steps to be taken by the States Parties to the present Covenant to achieve the full realisation of this right shall include those necessary for the conservation, the development, and the diffusion of science and culture.*

3. *The States Parties to the present Covenant undertake to respect the freedom indispensable for scientific research and creative activity.*

4. *The States Parties to the present Covenant recognise the benefits to be derived from the encouragement and development of international contacts and co-operation in the scientific and cultural fields*."

Article 15, in the works of the Committee on Economic, Social and Cultural Rights (*hereinafter* CESCR) and many scholars, has been interpreted to include the 'Right to Science'. Further, the responsibilities of member states and the international community vis-à-vis the right to science are said to flow from a combined reading of Article 15 and Article 2.[1] Article 2 (1), (2) of the ICESCR provides:

"**1.** *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, including particularly the adoption of legislative measures.*

2. *The States Parties to the present Covenant undertake to guarantee that the rights enunciated in the present Covenant will be exercised without discrimination of any kind as to race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status.*"

Under the auspices of Article 15, deliberations amongst stakeholders have mostly emphasised the significance of the right to science vis-à-vis other human rights under the ICESCR (for example, the right to health). In addition, the cross-sectoral significance of the right has also been duly noted. In the words of Porsdam, "*Article 15 touches upon complicated and important*

[1] International Covenant on Economic, Social and Cultural Rights (adopted 16 December 1966, entered into force 23 March 1976) 999 UNTS 171.

issues of access and participation in science, science policy, and science priority-setting."[2] The need for 'prioritizing science' has been particularly felt for both the enjoyment of other human rights, and for regulating other sectors including technology, medicine, education, health, and environment.[3] The CESCR, through the two normative interventions, makes an attempt to accommodate the divergent views on science and the right to science.

The CESCR, as the core treaty body under the ICESCR framework, is concerned with the interpretation, monitoring and implementation of the rights provided therein. The interpretive function, in particular, has been undertaken by the CESCR with the adoption of general comments on specific provisions and themes under the ICESCR. As interpretive statements, the General Comments of the CESCR add normative value to the provisions of the Covenant. They also have persuasive value for assisting domestic systems, governments and NGOs in reporting human rights situations.[4]

Previously, the CESCR has adopted general comments on specific provisions and themes under the ICESCR.[5] In the year 2018, CESCR initiated a discussion on the draft general comment on Article 15.[6] In 2020, the Committee adopted General Comment No. 25 on Science and

[2] Helle Porsdam, 'Science as a Cultural Right' in *Humanistic Futures of Learning: Perspectives* (UNESCO 2020) 159.

[3] Lea Shaver, 'The Right to Science and Culture' (2010) 1 Wisconsin Law Review; Anna-Maria Hubert, 'The Human Right to Science and its Relationship to International Environmental Law' (2020) 31(2) The European Journal of International Law; Haochen Sun, 'Reinvigorating the Human Right to Technology' (2020) 41 MJIL 279; Andrea Boggio, 'Human Rights and Global Health Emergencies Preparedness' (2020) 10(1) JoGH <http://jogh.org/documents/issue202001/jogh-10-010334.htm> accessed 24 August 2020; Sebastian Porsdam Mann, Helle Porsdam and Yvonne Donders, 'Sleeping Beauty: The Right to Science as a Global Ethical Discourse' (2020) 42(2) Human Rights Quarterly 343; Michael Scanlon, Gillian MacNaughton and Courtenay Sprague, 'Neglected Population, Neglected Right: Children Living with HIV and the Right to Science' (2017) 9(2) Health and Human Rights Journal.

[4] Kerstin Mechlem, 'Treaty Bodies and the Interpretation of Human Rights' (2009) 42(3) Vanderbilt Journal of Transnational Law.

[5] UN Committee on Economic, Social and Cultural Rights, 'General Comment No 1: Reporting by States Parties' (1981) UN Document E/1989/22, 'General Comment No 6: The Economic, Social and Cultural Rights of Older Persons' (1995) UN Document E/1996/22; 'General Comment No 9: The Domestic Application of the Covenant' (1998) UN Document E/C.12/1998/24; 'General Comment No 15: The Right to Water' (2003) UN Document E/C.12/2002/11, 'General Comment No 19: The Right to Social Security' (2008) UN Document E/C.12/GC/19,'General Comment No 20: Non-discrimination in Economic, Social and Cultural Rights' (2009) UN Document E/C.12/GC/20, 'General Comment No 21:The Right of everyone to take part in Cultural Life' (2009) UN Document E/C. 12/GC/21, 'General Comment No 23 on the Right to Just, and Favourable Conditions of Work' (2016) UN Document E/C.12/GC/23, 'General Comment No 22 on the Right to Sexual and Reproductive Health' (2016) UN Document E/C.12/GC/22, and 'General Comment No 24 on State Obligations under the ICESCR in the context of Business Activities' (2017) UN Document E/C.12/GC/24 <https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/TBSearch.aspx?Lang=en&TreatyID=9&DocTypeID=11> accessed 24 August 2020.

[6] Office of the United Nations High Commissioner for Human Rights, 'General discussion on a draft general comment on article 15 of the International Covenant on Economic, Social and Cultural Rights: on the right to enjoy the benefits of scientific progress and its applications and other provisions of article 15 on the relationship

Economic, Social and Cultural Rights (*hereinafter* 'GC No. 25').[7] The General Comment offers a normative framework for the human right to science, including the core commitments of states and the international community, and the entitlementss of the beneficiaries of the right. Under GC No. 25, the CESCR also discusses the challenges facing the implementation and realisation of the right to science.

In addition to GC No. 25, the CESCR adopted the 'Statement on the Coronavirus Disease (COVID-19) Pandemic and Economic, Social and Cultural Rights' (*hereinafter* 'COVID-19 Statement').[8] The COVID-19 Statement discusses the role of science and the right to science in responding to the needs created by the pandemic.

In this paper, a combined reading of GC No.25 and the COVID-19 Statement is being done to gain some insights on the content, scope and relevance of the right to science.

GENERAL COMMENT NO. 25

GC No. 25 is an authoritative statement on Article 15 of the ICESCR. In specific, GC No. 25 is an interpretation of Article 15 clause (1)(b), (2), (3) and (4). Prior to the adoption of GC No. 25, several statements and resolutions on the scope of Article 15 were adopted by human rights institutions. In 2009, the 'Vienna Statement on Right to Enjoy the Benefits of Scientific Progress and its Applications' (*hereinafter* 'The Vienna Statement') was adopted by UNESCO. The Vienna Statement defined the nature and scope of the right.[9] In 2012, the Special Rapporteur in the field of Cultural Rights discussed the nature and scope of the right to enjoy the benefits of scientific progress, indicating that it was essential to consider what the right to science means as a human right.[10]

between Science and Economic, Social and Cultural Rights' (2018) <https://ohchr.org/EN/HRBodies/CESCR/Pages/Discussion2018.aspx> accessed 24 August 2020.

[7] Committee on Economic, Social and Cultural Rights, 'General Comment No 25 (2020) on Science and Economic, Social and Cultural Rights (art 15 (1)(b), (2), (3) and (4) of International Covenant on Economic, Social and Cultural Rights)' (2020) UN Document E/C.12/GC/25 <https://undocs.org/E/C.12/GC/25> accessed 24 August 2020.

[8] Committee on Economic, Social and Cultural Rights, 'Statement on the Coronavirus Disease (COVID-19) Pandemic and Economic, Social and Cultural Rights' (2020) UN Document E/C.12/2020/1 <https://undocs.org/E/C.12/2020/1> accessed 24 August 2020.

[9] Maritza Formisano Prada, *Empowering the Poor: Through Human Rights Litigation* (UNESCO 2011).

[10] United Nations General Assembly 'Report of the Special Rapporteur in the Field of Cultural Rights' (2012) UN Document A/HRC/20/26 <https://undocs.org/en/A/HRC/20/26> accessed 24 August 2020.

In this context, GC No. 25 of the CESCR can be seen integrating the essence of these resolutions and statements. By doing so, it is also making valuable additions to the existing jurisprudence on the subject. Under GC No. 25, the CESCR can be seen as employing a transformative approach. By interlinking the right to science to other fields of law and policy, the CESCR contributes to the universalization of the right to science.[11] Emphasis has also been placed on the implementation of the right in accordance with fundamental human rights principles including freedom, dignity, non-discrimination, participation, access and redressal.

On the question as to why a *general comment* on the right to science was needed, the CESCR cites two reasons; first, the minimum attention that the right received by the States, and second, the unequal distribution of scientific benefits, despite rapid scientific advancement over the years.[12] The *comment* is fairly detailed to the extent that it addresses several themes pertaining to the right. This paper covers three broad themes of GC No.25 . These include (a) definitions-benefits and beneficiaries (b) state responsibility, and (c) framework for implementation.[13] The theme "challenges to implementation" is being discussed in light of the COVID-19 Statement. This paper does not include the CESCR led discussions on cultural rights, right to health, sustainability, vulnerable groups, limitations on the right to science, and traditional knowledge systems.

BENEFITS AND BENEFICIARIES

On the scope of the right to science, Wyndham and Vitullo define it as being a 'multifaceted right', inclusive of a bundle of material and non-material resources.[14] When placed in a right–duty context, the right is defined as including two distinct but interrelated sets of rights, i.e., 'the right of everyone to benefit from advancements in science and technology and the rights of science', i.e., 'the right to freedom of scientific research, to intellectual property, to participate in learned societies', etc.[15] In terms of duties, states are required to ensure that scientific knowledge is produced and translated into applications, such as drugs and vaccines, that are beneficial to rightsholders.[16]

[11] Kerstin Mechlem, 'Treaty Bodies and the Interpretation of Human Rights' (2009) 42(3) Vanderbilt Journal of Transnational Law.
[12] Andrea Boggio and others, 'What is the Human Right to Science' (2019) 2(3) CRISPR Journal.
[13] Committee, 'General Comment No 25' (n 7).
[14] Jessica M Wyndham and Margaret Weigers Vitullo, 'Define the Human Right to Science' (2018) 362(6418) Science.
[15] Committee, 'Statement on the Coronavirus Disease' (n 8).
[16] Andrea Boggio, 'Human Rights and Global Health Emergencies Preparedness' (2020) 10(1) Journal of Global Health <http://jogh.org/documents/issue202001/jogh-10-010334.htm> accessed 24 August 2020.

In this context, Haochen Sun, while defining the expression 'benefits of science' refers to the expression right to technology as a more appropriate expression covering the 'benefits' or the material applications of science.[17] On the subject, the CESCR gives an expansive interpretation of the expression 'benefits of science'. In the words of the CESCR, "*science, which encompasses natural and social sciences, refers both to a process following a certain methodology (doing science) and to the results of this process (knowledge and applications)*."[18] Further, applications are the implementation of science to the specific concerns and needs of the population. The expression 'applied science'covers the technology deriving from scientific knowledge, such as medical applications, industrial or agricultural applications, or information and communications technology.[19]

The beneficiaries of science are those who are entitled to the benefits of science. In light of Article 15, Mann, Porsdam, and Doners offer an expansive meaning to the expression 'beneficiaries' (everyone, as provided under Article 15) which include those participating in science, generating new technologies, and those who are end-users. The beneficiaries are those who rely on the results of scientific endeavours and those who may also be negatively impacted by the conduct of science.[20]

Under GC No.25, 'beneficiaries' include scientists and the general population. As per the CESCR, any other interpretation on the right and its beneficiaries would restrict and defeat the very objective of the right.[21] As stated in the general comment, scientists, as beneficiaries, have the right to undertake scientific work and research. The freedom of scientific research forms an integral part of the right. The scope of freedom of scientific research is further elaborated upon by the CESCR. It says, "*in order to flourish and develop, science requires the robust protection of freedom of research…This freedom includes, at the least, the following dimensions: protection of researchers from undue influence on their independent judgment… the freedom of researchers to freely and openly question the ethical value of certain projects and the right to withdraw from those projects if their conscience so dictates; the freedom of researchers to cooperate with other researchers, both nationally and internationally; and the*

[17] Haochen Sun, 'Reinvigorating the Human Right to Technology' (2020) 41 Michigan Journal of International Law 292.
[18] Committee, 'General Comment No 25' (n 7).
[19] ibid.
[20] Sebastian Porsdam Mann, Helle Porsdam and Yvonne Donders, 'Sleeping Beauty: The Right to Science as a Global Ethical Discourse' (2020) 42(2) Human Rights Quarterly 343.
[21] Committee, 'General Comment No 25' (n 7).

sharing of scientific data and analysis with policymakers, and with the public wherever possible."

While discussing the rights of individuals, GC No. 25 refers to the concept of 'Citizen Science'. Citizen science means the doing of science by ordinary people. Under Article 15, the state must refrain from preventing citizen participation in scientific activities. In addition, the participation of citizens in the enjoyment of scientific benefits and advancements is viewed as being in alignment with the objective of Article 15. In this regard, the use of science is also being viewed as forming critical and responsible citizens who can participate fully in a democratic society.[22]

STATE RESPONSIBILITY

In light of GC No. 25, states are obligated to cater to the promotion, conservation, and development of science. The core mandates for states include, first, non-interference on the part of the state in the freedom of individuals and institutions to develop science and diffuse its results, i.e., respect for freedom in scientific research;[23] second, taking positive steps for the advancement of science (development); and third, the protection and dissemination of scientific knowledge, and its applications under the principle of non-discrimination.

The application of the non-discrimination principle is further elaborated by the CESCR: "*the state (parties) must adopt the measures necessary to eliminate conditions and combat attitudes that perpetuate inequality and discrimination in order to enable all individuals and groups to enjoy this right without discrimination, including on the grounds of religion, national origin, sex, sexual orientation and gender identity, race and ethnic identity, disability, poverty, and any other relevant status."*[24] Additionally, the principle of non-discrimination also creates a mandate for the elimination of discriminatory laws, particularly laws which limit the access of individuals and groups to information/knowledge/services related to science. The obligation to remove discriminatory barriers has been identified by the CESCR as an immediate obligation.[25]

In this regard, the CESCR discusses the disproportionate effect of discriminatory laws on three vulnerable groups; women, persons with disabilities, and persons living in poverty.

FRAMEWORK FOR IMPLEMENTATION

[22] ibid.
[23] ibid.
[24] ibid.
[25] ibid.

Under the ICESCR framework, the CESCR has previously adopted standards for the implementation of economic, social, and cultural rights by member states. In particular, the CESCR relies on what is called the AAAQ framework (accessibility, availability, acceptability, quality) as a guide to assess and determine the scope of the state's responsibility vis-à-vis economic, social and cultural rights. The AAAQ framework discusses the conditions necessary and relevant for the accessibility, availability, acceptability, and quality of economic, social, and cultural rights. In the case of the human right to water, for instance, the CESCR in General Comment No. 15 relied on the acceptability criteria and stated that water services must be culturally appropriate and sensitive to gender, life cycle and privacy requirements. On the quality dimension, the CESCR stated that water must be safe and free from micro-organisms, chemical substances and radiological hazards that constitute a threat to a person's health.[26]

Under GC No. 25, the CESCR formulates the responsibilities of member states in light of the AAAQ framework.[27] The governing standards on state responsibility include: (a) the allocation of resources, i.e., prioritisation of research and development in the areas critical to the enjoyment of economic, social and cultural rights, (b) the approaches to science, i.e., the mandate for incorporating participatory approaches to the matters of science to ensure that state policies are in alignment with the recommendations of scientists or the scientific community and that appropriate mechanisms are adopted for redressal of violations including legal remedies, and (c) the protection of the members of society i.e. protection from misinformation and harmful consequences of false, misleading and pseudoscience-based practices. In this regard, CESCR also emphasises the need for human rights impact assessments to protect persons against risky applications.[28]

On the assessment of state performance, the availability dimension under the AAAQ framework implies that States are obligated to invest resources both in scientific progress, and the distribution and availability of the same to vulnerable and marginalised groups. The accessibility dimension includes access to scientific developments, and in particular information concerning risks associated with science and technology. A reference to quality here includes the utilization of science which is most advanced, up-to-date, verifiable, and generally acceptable to the scientific community. The acceptability dimension of the right

[26] Marie Villumsen and Mads Holst Jensen, *AAAQ and the Right to Water* (Danish Institute for Human Rights 2014).
[27] Committee, 'General Comment No 25' (n 7).
[28] ibid.

includes measures to ensure that the benefits of science and information are disseminated in a manner that is acceptable in different social and cultural contexts. The acceptability idea also directs that scientific education and the products of science should be in accordance with the particularities of populations with special needs, such as persons with disabilities.[29]

In the context of implementation of the right to science, CESCR's normative framework can be viewed as a guide for the making of laws policies, and other interventions. It is also expected to facilitate and shape the consultations that the member states will have with the CESCR.

THE COVID-19 STATEMENT

In addition to GC No. 25, the CESCR adopted the Statement on Coronavirus Disease pandemic and economic, social, and cultural rights in 2020 (COVID-19 Statement). The statement addresses the challenges posed to the realisation of economic, social, and cultural rights by the pandemic.[30] On the role of science, the Statement provides, "*responses to the pandemic should be based on the best available scientific evidence to protect public health. In the aftermath of the pandemic, scientific research should be promoted to learn lessons and increase preparedness for possible pandemics in the future.*"[31]

CHALLENGES

A combined reading of the two statements of the CESCR (GC No. 25 and COVID-19 statement) sheds light on the complexity of challenges posed to the realisation of economic, social, and cultural rights in general and the right to science in particular. In this context, the field of private scientific research has been given much attention by the CESCR. Here, private scientific research is primarily concerned with the role of non-state and business entities in the advancement of science. According to the CESCR, while non-state and business entities are instrumental in promoting scientific advancement, the large-scale privatisation of scientific research without other human rights considerations can be seen to be bearing negative effects.

The CESCR's concerns over privatisation of scientific research are also shared by scholars and other institutions across the world. Cosgrove and Shaughnessy, in light of the right to mental health, draw attention to the public health implications of commercialised science (i.e.

[29] ibid.
[30] Committee, 'Statement on the Coronavirus Disease' (n 8).
[31] ibid.

psychiatric science) [32]. In addition, concerns over privatisation can also be unearthed while exploring the interface between intellectual property laws (IPR) and human rights.[33] The interface has been a contentious agenda at both international and domestic forums. In 2015, the UN Special Rapporteur in the field of Cultural Rights discussed the implications of patent policy for the human rights to science and culture.[34] On the human rights considerations within patent law, the report of the Special Rapporteur stated, "*several flexibilities to patents can be used by national Governments when implementing multilateral treaties*". This is the key to strike a proper balance between private and public interests, and to ensure respect for a wide range of human rights. Yet, their effectiveness is limited by the infrequency of their use, for reasons ranging from capacity constraints to commercial and political pressures against their use).[35]

The COVID-19 Statement stresses on the requirement of regulatory measures to prevent profiteering on essential medicines and supplies.[36] It further provides that state parties should promote flexibilities or other adjustments in applicable intellectual property regimes to allow universal access to the benefits of scientific advances relating to COVID-19 such as diagnostics, medicines, and vaccines.[37] In another Statement of the CESCR titled Universal and Equitable Access to Vaccines for COVID-19, concerns over the costs and accessibility to benefits for developing countries and vulnerable groups were highlighted. The Statement mentions that the states are under a duty to prevent intellectual property and patent legal regimes from undermining the enjoyment of economic, social, and cultural rights by, for example, making critical public goods, such as vaccines or medicines, inaccessible to developing countries or impoverished communities because of unreasonable cost structures.[38]

Beyond the ICESCR framework, there is a growing demand for the regulation of private scientific research and intellectual property regimes. These demands are being advanced owing

[32] Lisa Cosgrove and Allen F Shaughnessy, 'Mental Health as a Basic Human Right and the Interference of Commercialized Science' (2020) 22(1) Health and Human Rights 61.
[33] Peter K Yu, 'Challenges to the Development of a Human Rights Framework for Intellectual Property' (2020) Texas A&M University School of Law Legal Studies Research Paper No. 19-52 <https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2517854> accessed 1 September 2020.
[34] United Nations General Assembly, 'Report of Special Rapporteur in the Field of Cultural Rights' (4 August 2015) <https://undocs.org/pdf?symbol=en/A/70/279> accessed 1 September 2020.
[35] ibid.
[36] Maritza (n 9).
[37] Committee, 'Statement on the Coronavirus Disease' (n 8).
[38] Committee on Economic, Social and Cultural Rights, 'Statement on Universal and Equitable Access to Vaccines for COVID-19' (2020) <https://tbinternet.ohchr.org/_layouts/15/treatybodyexternal/Download.aspx?symbolno=E/C.12/2020/2&Lang=en> accessed 24 August 2021.

to the vast inequities when it comes to both who is conducting science and who benefits from its investments.[39] In 2020, Doctors Without Borders (MSF) called for no patents or profiteering on drugs, tests or vaccines used for COVID 19. The organisation advocates for governments to take measures such as price controls, including advocacy for treating medical tools for COVID-19 as global public goods.[40] Another initiative was led by the Joint Statement submitted to the World Trade Organisation by India and South Africa in 2020. The Joint Statement concerns the Waiver From Certain Provisions Of The TRIPS Agreement For The Prevention, Containment And Treatment Of Covid-19.[41] In the words of Ghosh, efforts and advocacy are primarily motivated to circumvent the stranglehold of the big pharma companies on Covid-19 vaccines… [42]

Under the ICESCR framework, the CESCR's human rights-based interventions on science can be seen as an integral and valuable part of the ongoing global conversations.

FINAL POINTS

Considering the diversity of issues raised by the CESCR, its statements (GC No. 25 and COVID-19 Statement) are timely and stepping stones to building a robust normative framework on the human right to science. The CESCR has also shed light on the most contentious issues involving access, intellectual property protection, non-discrimination, and participation.[43]

On the centralising role of the CESCR vis-à-vis the right to science, the following factors can be taken into account; first, the CESCR's emphasis on the role of science and right to science for 'preparedness for the future' is novel. The preparedness dimension of the right can be

[39] Gretchen T Goldman, 'Science for All? Confronting Inequities and Envisioning Federal Science as a Public Good' (*American Bar Association*, 15 June 2021) <www.americanbar.org/groups/crsj/publications/human_rights_magazine_home/the-truth-about-science/science-for-all/> accessed 16 June 2021.
[40] 'MSF to Pharma: No Profiteering on Coronavirus Pandemic' (*Doctors without Borders*, 27 March 2020) <https://doctorswithoutborders.org/what-we-do/news-stories/news/msf-pharma-no-profiteering-coronavirus-pandemic> accessed 03 July 2021.
[41] Council for Trade-Related Aspects of Intellectual Property Rights, 'Communication from India and South Africa on Waiver from Certain Provisions of the TRIPS Agreement for the Prevention, Containment and Treatment of Covid-19' (World Trade Organization 2 October 2020) <https://docs.wto.org/dol2fe/Pages/SS/directdoc.aspx?filename=q:/IP/C/W669.pdf&Open=True> accessed 03 July 2021.
[42] Jayati Ghosh, 'Vaccine Apartheid: Global Inequities in COVID-19 Vaccine Production and Distribution' (*Open Global Rights*, 12 June 2021) <www.openglobalrights.org/vaccine-apartheid-global-inequities-in-covid-vaccine-production-and-distribution/?lang=English> accessed 13 June 2021.
[43] Committee, 'Statement on the Coronavirus Disease' (n 8).

interpreted as a qualitative addition the CESCR is making to the existing framework on rights under the ICESCR, particularly the AAAQ framework on the implementation of rights. By making preparedness a goal or objective, the CESCR establishes the importance of the right to science vis-à-vis other rights including the right to health. The preparedness dimension also draws attention to the need for investments towards the human right to science.

Second, while discussing the scope of the right to science, the CESCR refers to the significance of the right across sectors including health, intellectual property, education, and environment. By doing so, the CESCR facilitates the mainstreaming of the right. Third, by emphasizing the various 'benefits and applications' of science, the CESCR reinvigorates discussions on the human right to technology.[44] Fourth, the CESCR's remarks on the responsibility of the states, the international community, the scientific community and private actors to strengthen human rights advocacy within domestic and international settings. And fifth, the CESCR has made a strong case for interpreting and understanding the legal, moral and political significations of the right to science.

All in all, the CESCR has taken the necessary steps to fill the gaps in the ICESCR framework. While doing so, it has reiterated the relevance of employing a human rights-based approach to address the challenges being faced by states, societies and the international community.

[44] Haochen (n 17).