# Impacts of the Climate and Health Crises on Food Security: Towards Ensuring a Rights-Based Approach to Food Security in Nigeria

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## Abstract

The agenda to end hunger, achieve food security and improved nutrition is at the heart of the sustainable development goals. Despite the progress achieved in attaining the zero hunger goal, agricultural systems worldwide face immense risks that threaten to undercut the progress thus far. The climate crisis and associated effects of the health crisis are already impacting food systems, making the challenge of achieving food security more daunting. This reality is even more evident in developing countries, like Nigeria, where the majority of the population rely mainly on subsistence agriculture. The climatic and environmental conditions of the country's northern and southern regions continue to face a waning trajectory as the increasingly changing climate exacerbates food insecurity conditions in the country. With the COVID-19 pandemic, the challenges hampering the attainment of food security in Nigeria is heightened. This thesis examines the adverse impacts of the climate and COVID-19 crises on food security. It adopts a human rights approach in assessing the current legal and policy framework for food security in Nigeria and makes policy recommendations that yield better people-centric results in achieving food security. By identifying pitfalls in the current policy framework and their implications in hindering food security, the thesis advances the incorporation of human rights principles in strategies aimed at improving food insecurity in Nigeria.



## Résumé

Le but d'éliminer la faim, d'assurer la sécurité alimentaire et d'améliorer la nutrition est au cœur des objectifs de développement durable (SDGs). Malgré les progrès réalisés pour atteindre le programme « zéro faim », les systèmes agricoles du monde entier sont confrontés à d'immenses risques qui menacent de compromettre les progrès réalisés jusqu'à présent. La crise climatique et les effets associés de la crise sanitaire ont déjà un impact sur les systèmes alimentaires, ce qui rend le défi de la sécurité alimentaire plus redoutable. Cette réalité est encore plus évidente dans les pays en développement comme le Nigéria, où la majorité de la population dépend principalement de l'agriculture de subsistance. Les conditions climatiques et environnementales des régions du nord et du sud du pays continuent d'être confrontées à une trajectoire décroissante, alors que le climat de plus en plus changeant aggrave les conditions d'insécurité

alimentaire dans le pays. Avec la pandémie COVID-19, les défis qui entravent la réalisation de la sécurité alimentaire au Nigéria sont accrus. Cette thèse examine les impacts négatifs du climat et des crises du COVID-19 sur la sécurité alimentaire. Il adopte une approche fondée sur les droits de l'homme pour évaluer le cadre juridique et politique actuel de la sécurité alimentaire au Nigéria et formule des recommandations politiques qui donnent de meilleurs résultats centrés sur les personnes dans la réalisation de la sécurité alimentaire. En identifiant les écueils du cadre politique actuel et leurs implications pour entraver la sécurité alimentaire, la thèse fait progresser l'incorporation des principes des droits de l'homme dans les stratégies et recommandations visant à améliorer l'insécurité alimentaire au Nigéria.

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## Acronyms and Abbreviations

| | |
|---|---|
| APP | Agriculture Promotion Policy |
| CESCR | Committee on Economic, Social and Cultural Rights |
| FAO | Food and Agriculture Organisation of the United Nations |
| FSNS | Food Security and Nutrition Strategy |
| HRBA | Human Rights-Based Approach |
| HRC | Human Rights Committee |
| ICCPR | International Covenant on Civil and Political Rights |
| ICESCR | International Covenant on Economic, Social and Cultural Rights |
| IHRL | International Human Rights Law |
| IPCC | Intergovernmental Panel on Climate Change |
| NARF | National Agricultural Resilience Framework |
| NGO | Non-Governmental Organisation |
| OCHR | United Nations Office of the High Commissioner for Human Rights |
| SDG | Sustainable Development Goal |
| UDHR | Universal Declaration on Human Rights |
| UN | United Nations |
| UNFCCC | United Nations Framework Convention on Climate Change |
| WFP | World Food Programme |
| WFS | World Food Summit |
| WHO | World Health Organisation |

## 1.0 Introduction

The sustainable development goal to eradicate hunger, achieve food security, and improved nutrition by 2030, has gained good progress over the years. However, climate change threatens to undercut and possibly, reverse the progress thus far. The most vulnerable to climate change are also the world's hungriest.[1] Climate change threatens the ability of entire regions to feed themselves.[2] The impacts of climate change and associated climate disruptions on agricultural systems worldwide pose great risks to food security.[3] Understandably, therefore, existing legal scholarship on the relationship between the right to food and climate change has indicated climate change as a factor that hinders food security.[4] As affirmed by Olivier De Schutter, the former United Nations Special Rapporteur on the Right to Food, "only climate change policies deeply rooted in a human rights context will ensure that the impact on the most vulnerable people will be minimized."[5] Urgent action is therefore needed to link climate change and food security efforts with the realization of the right to food.

With only a decade to the projected timeframe for achieving the sustainable development goals, it is expedient for countries, the global community, and other development actors to ramp up efforts to achieve the zero hunger goal. Unfortunately, COVID-19 has dealt a devastating blow to global food security. While countries are making efforts to address climate change impacts on food security, the effects of the COVID-19 pandemic has increased threats to food and nutrition security.[6] More than one in nine of the world population are recorded to suffer from hunger and

[1] See Elisabeth Caesens & Maritere Padilla Rodríguez, "Climate Change and the Right to Food, A Comprehensive Study" (2009) 8 Heinrich Böll Stiftung Publication Series on Ecology 9 at 15. See also IPCC, 2018: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. In Press.
[2] See Oliver De Schutter, "Climate Change, What is the Impact of Climate Change on the Right to Food?", online: <www.srfood.org/en/climate-change-2> accessed 02 March 2020.
[3] See Hugh Turral et al, *Climate Change, Water and Food Security* (Rome: Food and Agriculture Organization of the United Nations, 2011) 45-76.
[4] See Peter Gregory, John Ingram & Michael Brklacich, "Climate Change and Food Security" (2005) 360:1463 Philosophical Transactions of the Royal Society B 2139-2148.
[5] *Supra* note 2.
[6] See United Nations, "Policy Brief: The Impact of COVID-19 on Food Security and Nutrition" (June 2020), online (pdf): <www.un.org/sites/un2.un.org/files/sg_policy_brief_on_covid_impact_on_food_security.pdf> accessed 03 July 2020.

malnutrition.[7] In Nigeria, the number of acutely food-insecure people was forecast at 7.1 million, increasing by over 40 percent especially due to the impacts of the measures adopted to mitigate effects of the COVID-19 pandemic.[8]

Nigeria occupies a land area of 923,768 square kilometers, with a population of over 200 million people.[9] The country is located in the tropical region, with two main vegetation zones: the rain forest and savannah zones. These reflect the amount of rainfall and spatial distribution, making it vulnerable to climate change and variability.[10] Nigeria's agricultural sector is dominated by subsistence farming, as a vast number of farmers depend on agriculture as their primary source of income and food. This means of livelihood is continuously threatened by the increasingly changing climate. The apparent deterioration in the food security situation in the country is inextricably linked to the waning environmental conditions experienced in varied ways across Nigeria. As scientifically proven, changes in local climate patterns can have significant impacts on food production, especially in rural tropical areas practicing subsistence agriculture and semi-arid tropical regions like Northern Nigeria.[11] Consequently, drought has become common in the north, while erosion and flooding are significant problems in the south.[12] For example, the South-South and South-West geopolitical zones in Nigeria are mainly affected by sea level rise and deforestation, the South-East zone is affected mainly by erosion, flooding and land degradation, the North-Central is impacted by changes due to deforestation and over-grazing, the

[7] See WFP, "Hunger Map" (14 August 2019), online: *World Food Programme* <docs.wfp.org/api/documents/WFP-0000108355/download/?_ga=2.176501605.1996055633.1589812441-555022574.1589812441> accessed .
[8] See Femi Ibirogba, "Seven Million Nigerians to Suffer Acute Hunger in Three Months" (08 June 2020), online: *The Guardian* <guardian.ng/news/seven-million-nigerians-to-suffer-acute-hunger-in-three-months/>.
[9] See Temidayo Apata, & Ors, "The Economic Role of Nigeria's Subsistence Agriculture in the Transition Process: Implications for Rural Development" (18-20 April 2011) 85th Annual Conference of the Agricultural Economics Society, Warwick University, online (pdf): <core.ac.uk/download/pdf/6426073.pdf>. See also the World Bank, "Land Area (sq.km) Nigeria" online: <data.worldbank.org/indicator/AG.LND.TOTL.K2?locations=NG> accessed 05 May 2020. See also First Biennial Update Report (BUR1) of the Federal Republic of Nigeria under the United Nations Framework Convention on Climate Change (UNFCCC), 2018.
[10] *Ibid* [Apata].
[11] See C. Mbow et al, "Food Security" in P. Shukla et al (eds.), *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems* (2019, IPCC) 437-550 at 460. See also John Morton, "The Impact of Climate Change on Smallholder and Subsistence Agriculture" (2007) 104:50 PNAS 19680-19685 at 19682.
[12] See Nebedum Ebele & Nnaemeka Emodi, "Climate Change and Its Impact in Nigerian Economy (2016) 10:6 Journal of Scientific Research & Reports 1-13 at 6-7.

North-East by drought, desertification and heat-stress, and the North-West is also affected by drought, desertification and heat stress.[13]

Given the deterioration of the Nigeria's oil sector, the federal government has increasingly refocused its attention to revamping the country's agricultural sector.[14] This declaration, however, is not equally matched with the formulation and execution of adequate measures to effect necessary changes. Failed policies and recycling of old strategies – that fail to consider the people as active actors in the policy process – characterize the government's efforts thus far. Hence, the necessity for a human rights approach to food security in Nigeria. Mainstreaming human rights principles in the government's policies provides a framework, which signals a people-centered approach that promotes the observance of human rights principles like equality, non-discrimination, participation, inclusion, transparency and accountability, and empowers the people as rights holders entitled to a range of duties by public and private actors.[15]

To this end, this thesis adopts a human rights approach in analysing Nigeria's policy efforts to achieve food security in the context of climate change and the COVID-19 pandemic. Scholars have suggested rights-based approaches to food security in Nigeria, highlighting Nigeria's obligations under international human rights law.[16] However, it is critical to assess current actions adopted by the government to address food security issues, particularly in light of the climate and health crises, and how a rights-based approach can yield better policy results in Nigeria. This work is even more important as it comes at a time when the current food and agriculture policy of the Nigerian government comes to an end in 2020, and the government is already beginning efforts to design a new policy.

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[13] See Josephine Okoli & Amaechi Ifeakor, "An Overview of Climate Change and Food Security: Adaptation Strategies and Mitigation Measures in Nigeria" (2014) 5:32 Journal of Education and Practice 13-19 at 14.
[14] See Obasesam Okoi, "The Paradox of Nigeria's Oil Dependency" (21 January 2019), online: *Africa Portal* <www.africaportal.org/features/paradox-nigerias-oil-dependency/>. See generally Solomon Ayado, "Economy: Return Nigeria to Cope with Oil Price" (18 March 2020), online: *Business Day* <businessday.ng/energy/oilandgas/article/economy-return-nigeria-to-agriculture-to-cope-with-oil-price-senate-urges/>.
[15] See Clementina Ajayi & Kemisola Adenegan, "Rights-Based Approach to Food Security and Nutrition in Nigeria" in Aromolaran et al (eds.), *Food Systems Sustainability and Environmental Policies in Modern Economies* (2018) 1GI Global 217-234.
[16] *Ibid*.

What are the pitfalls of the current legal and policy framework for food security in Nigeria, and how can these be revised or redesigned to yield better people-centric results in achieving food security in the country? In answering this question, the thesis studies the legal and policy framework for achieving food security in Nigeria through a rights-based approach lens and puts forward measures to adopt in line with a human rights approach and in the context of the crises. The thesis will interrogate the research question by engaging both domestic and international laws, policy reports, and data pertaining to food security, climate change and COVID-19 impacts on food security, and human rights. I have selected Nigeria as an illustrative study in this thesis because it is a hunger pervasive country, and is representative of the adverse effects of climate change and the COVID-19 pandemic on food security.[17] The outcomes herein will be useful to guide Nigeria as it designs a new agriculture and food security policy from 2021 onward.

The thesis is structured as follows: Chapter 2 introduces the concept and contours of the human rights-based approach to development and justifies its adoption in this research. It also discusses the right to food under international law and States' obligations with respect to this right, while considering the interdependency and indivisibility of human rights. Given the similarities, yet fundamental differences in the concepts of food security and the right to food, this chapter also discusses the distinctives of the two notions. Chapter 3 begins with an articulation of the intersection of climate change, COVID-19 and food security and the effects emerging from that relationship. Chapter 4 then interrogates the Nigerian government's responses to food insecurity. Here, I critically analyse the current legal and policy framework within the context of a human rights-based approach. The thesis concludes by proffering recommendations to aid future food security policy actions of the Nigerian government.

[17] See Jason Seawright & John Gerring, "Case Selection Techniques in Case Study Research: A Menu of Qualitative and Quantitative Options" (2008) 61:2, Political Research Quarterly, Pp. 294-308. I use the 'typical' method in Seawright and Gerring's cross-case methods of case selection and analysis.

## 2.0 Analytical Framework

This chapter provides an overview of the human rights-based approach (HRBA) as an analytical framework in interrogating the issues that arise in this thesis. The HRBA is a predominant concept in development practice and is generally adopted by development actors in addressing development concerns, such as food insecurity. It arguably provides a more effective and inclusive strategy for tackling development challenges.[18]

I begin this section by discussing the contours of the human rights approach to development, its meaning, and implications. Thereafter, I will consider the concept of food security and its relationship with human rights, including the right to food, and State obligations under international human rights law (IHRL).

### 2.1 Scope of International Human Rights Law

The framework of international human rights law is broadly classified into two main categories: civil and political rights, and economic, social and cultural rights. These rights are contained in the core human rights treaties: International Covenant on Civil and Political Rights (ICCPR),[19] International Covenant on Economic, Social and Cultural Rights (ICESCR),[20] as well as other treaties that provide for the protection of the human rights of specific groups of people, such as the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW),[21] Convention on the Rights of Persons with Disabilities,[22] Convention on the Rights of the Child,[23]

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[18] See The Deutsche Gesellschaft für Internationale Zusammenarbeit, "A Human Rights-Based Approach to Disability in Development" (December 2012), online: <reliefweb.int/sites/reliefweb.int/files/resources/A_human_rights-based_approach_to_disability_in_development.pdf> at 7, accessed 20 September 2020.

[19] UN General Assembly, International Covenant on Civil and Political Rights, 16 December 1966, United Nations, Treaty Series, vol. 999, p. 171 [ICCPR].

[20] UN General Assembly, International Covenant on Economic, Social and Cultural Rights, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3 [ICESCR].

[21] Convention on the Elimination of All Forms of Discrimination Against Women, 18 December 1979, United Nations, Treaty Series, vol. 1249, p. 13 [CEDAW].

[22] UN General Assembly, Convention on the Rights of Persons with Disabilities, 24 January 2007 [CRPD].

[23] UN General Assembly, Convention on the Rights of the Child, 20 November 1989, United Nations, Treaty Series, vol. 1577, p. 3 [CRC].

Framework Convention for the Protection of Minorities,[24] Convention Relating to the Status of Refugees,[25] etc.

Human rights are not limited to the rights of individual human beings. The concept of human rights extends to safeguard "the dignity of a group or a people, and a group's physical integrity, as well as its civil, cultural, economic, political, and social engagement."[26] IHRL integrally incorporates the protection of certain groups of persons, particularly those whose situation renders, or is likely to render, them more susceptible to violations of human rights to a greater extent than other individuals.[27] In many instances, groups of individuals are discriminated against or oppressed because they belong to a group or possess a group identity and sense of human dignity that is dependent on them belonging to a group.[28] For these persons, human rights protection is accorded to them as individual members of the society, and as a group in general. Examples of these specific groups include children, minorities, women, indigenous peoples, refugees, stateless persons, persons with disabilities, etc.

## 2.2 The Concept of a Human Rights Approach to Development

The inception of the HRBA to development dates back to the late 1990s. The end of the Cold War birthed a change in the perception of global problems and the challenges of globalisation. This change brought about a rethinking of development and human rights policy, resulting in the eventual integration of human rights in development projects. Armatya Sen played a prominent role in exploring the connection of human rights and development, which he likened to freedom and capabilities respectively.[29] He argues that economic development is closely linked to freedom – political freedom and transparency, freedom of opportunity, freedom of protection

[24] Council of Europe, Framework Convention for the Protection of National Minorities, 1 February 1995, ETS 157.
[25] UN General Assembly, Convention Relating to the Status of Refugees, 28 July 1951, United Nations, Treaty Series, vol. 189, p. 137
[26] See Robert McCorquodale, "Group Rights" in Daniel Moeckli et al, *International Human Rights Law,* 3rd ed (Oxford: Oxford University Press, 2018) at 333.
[27] See Ingrid Nifosi-Sutton, *The Protection of Vulnerable Groups under International Human Rights Law* (London: Routledge, 2017) at 270.
[28] *Supra* note 26 at 334.
[29] See Armatya Sen, *Development as Freedom*, 2nd ed (Oxford: Oxford University Press, 1999) at 3-4.

through economic assistance – and that poverty is often associated with lack of freedom.[30] Sen's work laid the foundation for the recognition of development as a process of expanding human freedoms, therefore, changing the manner in which we perceive the development process and the procedures we adopt in pursuing same.[31] Within a few years, the human rights model gained momentum, as it became commonly used by development agencies and non-governmental organisations worldwide.[32] Likewise, it is increasingly being adopted by States in approaching development issues. Today, it occupies a significant space in international development discourse, with scholars and practitioners proposing and implementing a HRBA to diverse issues, ranging from health, to education, food security, climate change, etc.

There is no uniform and generally accepted understanding of how a HRBA should be operationalised, however, there are a number of common characteristics in the HRBA discourse. The golden thread that runs through existing definitions of the HRBA is the application of international human rights norms in its model of operation. HRBAs generally involve the application of human rights norms in development activities. The United Nations Office of the High Commissioner for Human Rights (OHCHR) defines the HRBA as a "conceptual framework for the process of human development that is normatively based on international human rights standards and operationally directed to promoting and protecting human rights."[33] The approach seeks to consider the inequalities and diversities that lie at the heart of development problems, and redress discriminatory practices, inequities and unjust distributions of power that impede development progress.[34] Similarly, Darrow defines the HRBA as the reorientation or realignment of development in accordance with human rights goals, and the integration of human rights principles and standards in development policies and processes.[35]

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[30] *Ibid*. See also He Zhipeng, "The Development Approach of Human Rights" in *The Development Approach of Human Rights* (Leiden: Brill & Nijhoff, 2019) at 50.
[31] *Ibid* at 33.
[32] See Shannon Kindornay, James Ron & Charli Carpenter, "Rights-Based Approaches to Development: Implications for NGOs (2012) 34:2 Human Rights Quarterly 472-506 at 473.
See, e.g., UNDP, Human Development Report: Human Rights and Human Development (2000); Integrating Human Rights with Sustainable Human Development: A UNDP Policy Document, (New York: UNDP, 1998).
[33] See OHCHR, "Frequently Asked Questions on a Human Rights-Based Approach to Development Cooperation" (2006) online (pdf): <www.ohchr.org/Documents/ Publications/FAQen.pdf> at 15, accessed 09 April 2020.
[34] *Ibid*.
[35] See Mac Darrow, "A Human Rights-Based Approach to Development: Theoretical and Operational Issues for the World Bank" (2006) 2 World Bank Leg Rev 385 at 386.

This approach builds on the international normative system of human rights and the obligations undertaken by States parties under the framework of international human rights law.

The HRBA embodies good governance principles, such as transparency, responsiveness, equity and inclusiveness, accountability, and participation. According to Gauri and Gloppen, HRBAs involve principles that justify demands against privileged actors, made by the poor or those speaking on their behalf, for using national and international resources and rules to protect the crucial human interests of the globally or locally disadvantaged.[36] This definition leaves open the notion that individuals, firms, and other private actors may be duty-bearers, by not restricting claims to States or governments.[37] Indeed, the scope of obligations under IHRL has expanded to include non-State actors.[38] Clapham argues that despite the lack of academic consensus on the obligations of non-State actors, they do already have international human rights obligations.[39] Consequently, the human rights approach does not only regard States as key drivers of development, but also non-State actors as they increasingly have responsibilities under IHRL.

Although the HRBA increasingly pursues a rights normative agenda, the approach does not only underscore human rights as legal obligations or the subject of binding treaty obligations under international law.[40] It also envisions other good practices. One such essential standard under HRBAs is that participation in the development process is viewed as both a means and a goal, where people are recognized as key actors in their own development, rather than passive beneficiaries of commodities and services.[41] The HRBA constitutes a more genuinely inclusive and democratic process of popular involvement in decision-making over the resources and

[36] See Varun Gauri & Siri Gloppen, "Human Rights Based Approaches to Development: Concepts, Evidence, and Policy" (2012) Policy Research Working Paper 5938, The World Bank, Development Research Group at 3.
[37] *Ibid*.
[38] See generally United Nations Guiding Principles on Business and Human Rights: Implementing the UN Protect, Respect and Remedy Framework, HR/PUB/11/04, 16 June 2011.
[39] See Andre Clapham, "Human Rights Obligations for Non-State Actors: Where Are We Now?" (2019) in Fannie Lafontaine & François Larocque, eds, *Doing Peace the Rights Way: Essays in International Law and Relations in Honour of Louise Arbour* (Intersentia, 2019) 11-36 at 11.
[40] See The World Bank, *Integrating Human Rights into Development: Donor Approaches, Experiences and Challenges,* 2nd ed (Washington, D.C.: The World Bank, 2013) at 70.
[41] See Morten Broberg & Hans-Otto Sano, "Strengths and Weaknesses in a Human Rights- Based Approach to International Development – An Analysis of a Rights-Based Approach to Development Assistance Based on Practical Experiences" (2018) 22:5 The International Journal of Human Rights, 664–680 at 667.

institutions that affect people's lives.[42] Therefore, it involves salient principles of the normative human rights framework, such as the principle of equality and non-discrimination.

The principle of equality and non-discrimination guarantees "all persons equal and effective protection against discrimination on any ground such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status."[43] The Human Rights Committee (HRC) asserts that this principle should be understood to imply any distinction, exclusion, restriction or preference which is based on any ground as provided in the ICCPR[44] which has the purpose or effect of nullifying or impairing the recognition, enjoyment or exercise by all persons, on an equal footing, of all rights and freedoms.[45] The enjoyment of human rights on an equal footing does not mean identical treatment in every instance.[46] Not every difference in treatment will constitute discrimination, for instance, where such treatment is geared towards eliminating obstacles that engender unequal outcomes. Because formal equality, which involves equal treatment, does not guarantee favourable outcomes, it is important to note the concept of substantive equality. While formal or procedural equality fails to recognise people's different situations by providing for equal treatment regardless of circumstances, substantive equality not only focuses on equal treatment, but also incorporates the differences in outcomes that may result from similar treatments.[47]

Barnard and Hepple observe that substantive equality focuses on equality of results, equal opportunities, and dignity.[48] In this regard, equality of opportunity will entail the removal of barriers that prevent access to opportunities. Similarly, it also requires positive action to

[42] See WFP, "Climate Action" online: *World Food Programme* <www.wfp.org/climate-action> accessed 09 April 2020.
[43] See Article 2(1) & 3 ICESCR, Article 3 & 26 ICCPR. The principle of equality and non-discrimination affirms the equal protection of persons before the law, and the promotion of human rights for all individuals without any discrimination.
[44] See Art. 2, ICESCR & Art. 26, ICCPR.
[45] See Human Rights Committee, General Comment No. 18: 'Non-discrimination' HRI/GEN/1/Rev.4 (1989) para. 6-7.
[46] *Ibid* at para. 8.
[47] See Jenny E. Goldschmidt, "New Perspectives on Equality: Towards Transformative Justice through the Disability Convention?" (2017) 35:1 Nordic Journal of Human Rights 1-14 at 3.
[48] See Catherine Barnard & Bob Hepple, "Substantive Equality", (2000) 59:3 Cambridge Law Journal 562-585 at 564-566.

compensate for disadvantages.[49] The HRC affirms the need for States parties to take affirmative action in order to diminish or eliminate conditions that perpetuate discrimination.[50] Further, Fredman puts forward a multi-dimensional approach in defining the concept of substantive equality: "to redress disadvantage; to address stigma, stereotyping, prejudice and violence; to enhance voice and participation; and to accommodate difference and achieve structural change." All these measures give rise to positive and negative obligations for States to ensure that substantive equality is achieved. Other human rights principles include the principles of participation and inclusion,[51] transparency and accountability,[52] universality and inalienability, and indivisibility and interdependence of rights.[53]

Finally, the human rights approach takes special consideration of vulnerable or marginalised groups. Vulnerability in IHRL commonly refers to "situations involving actual or potential exposure to harm and suffering affecting mainly specific groups of persons."[54] For instance, women often experience discrimination as a result of societal gender constructions; children are more at risk of harm or exploitation because of their physical and emotional dependence on others; and persons with disabilities are more likely to suffer physical and emotional difficulties and harm due to health conditions. These examples are non-exhaustive,[55] and States parties to IHRL treaties are obliged to ensure the equal and full enjoyment of the relevant rights by every

[49] *Ibid* at 566.
[50] *Supra* note 45 at para. 10.
[51] See Article 19, 21, 22(1) & 25 ICCPR, Article 15(1) ICESCR, Article 7 & 8 CEDAW, Article 13, 15 & 31 CRC reflect this principle. The principle of participation and inclusion provides for the active, free, and meaningful participation in, contribution to, and enjoyment of civil, political, economic, social, and cultural development by all individuals and segments of the society, without any discrimination. It includes the empowerment of all stakeholders in every facet of the development process, including implementation and accountability. See OHCHR, UN Guiding Principles and Guidelines for a Human Rights Based Approach to Poverty Reduction, HR/PUB/06/12.
[52] The principle of transparency and accountability speaks to the duty of States and other duty bearers to be answerable to rights holders. Where they fail to do so, aggrieved rights-holders are entitled to institute proceedings for appropriate redress before a competent court or other adjudicator in accordance with the rules and procedures provided by law. Transparency and accountability also facilitate identification of areas in which duty-bearers may need to concentrate their efforts See OHCHR, UN Guiding Principles and Guidelines for a Human Rights Based Approach to Poverty Reduction, HR/PUB/06/12 at 17-19.
[53] See OHCHR, UN Guiding Principles and Guidelines for a Human Rights Based Approach to Poverty Reduction, HR/PUB/06/12 at 5.
[54] *Supra* note 27. Examples of vulnerable groups include women, children, refugees, indigenous peoples, persons with disabilities, stateless persons, etc.
[55] See Nifosi-Sutton adds that people and communities located in developing countries are also vulnerable owing to the fact that they are most exposed to climate change effects and their level of development makes it difficult to respond to such emergencies. *Supra* note 27.

individual without discrimination. Specialised IHRL treaties concerning vulnerable groups impose specific obligations on State parties to take into account peculiar situations of the specific groups.[56] Regarding persons with disabilities, the Committee on Economic, Social and Cultural Rights' (CESCR's) General Comment 5 states that governments must take positive action to ensure that structural disadvantages are eliminated and appropriate preferential treatment is given to people with disabilities in order to achieve the objective of full participation and equal standing in society.[57] The CESCR underscores the obligation of State parties to prioritise situations of risk and take into account the precarious situation of disadvantaged and marginalized individuals or groups.[58]

### 2.3 Justification for a Human Rights-Based Approach

Over the years, different approaches have been developed to address development problems, such as the needs-based approach,[59] capability approach,[60] and market-based approach.[61] The rights-based approach, however, offers a distinctive approach that recognizes people as citizens with rights, as opposed to beneficiaries with needs, and encourages grassroots development participation in order to ensure that the voices of the least advantaged are heard. This approach renders the development process more effective in responding to human needs. A rights-based approach brings to development work the realisation that the processes by which development

[56] Examples of such treaties: UN General Assembly, Convention on the Rights of the Child, 20 November 1989, United Nations, Treaty Series, vol. 1577, p. 3; UN General Assembly, Convention on the Rights of Persons with Disabilities, 24 January 2007; Convention on the Elimination of All Forms of Discrimination Against Women, 18 December 1979, United Nations, Treaty Series, vol. 1249, p. 13; UN General Assembly, Convention Relating to the Status of Refugees, 28 July 1951, United Nations, Treaty Series, vol. 189, p. 137, etc.
[57] See UN Committee on Economic, Social and Cultural Rights (CESCR) General Comment No. 5: Persons with Disabilities, 9 December 1994, para. 1 & 9. See also *supra* note 45 at para. 5. See generally Audrey Chapman, and Benjamin Carbonetti, "Human Rights Protections for Vulnerable and Disadvantaged Groups: The Contributions of the UN Committee on Economic, Social and Cultural Rights" (2011) 33:3 *Human Rights Quarterly* 682–732.
[58] See Committee on Economic, Social and Cultural Rights, "An Evaluation of the Obligation to take steps to the "Maximum of Available Resources" under an Optional Protocol to the Covenant" (10 May 2007) E/C.12/2007/1, para. 6. See also *Ibid* [Chapman].
[59] See generally Action Aid, "A Brief Summary of the Differences Between a Needs-Based Approach and a Rights-Based Approach", online (pdf): <washmatters.wateraid.org> accessed 11 April 2020.
[60] See generally Francesco Burchi and Pasquale De Muro, "A Human Development and Capability Approach to Food Security: Conceptual Framework and Informational Bases" (2012) 009 WP UNDP at 2.
[61] See generally Jeffery McMullen, "Delineating the Domain of Development Entrepreneurship: A Market–Based Approach to Facilitating Inclusive Economic Growth" (2011) 35:1 Entrepreneurship Theory & Practice 185-215.

aims are pursued should themselves respect and fulfil human rights.[62] It is, in fact, affirming the rights status of almost all development concerns. Because development interests largely stem from meeting basic human needs, and majority of these needs are recognized as human rights contained in the ICESCR, a human rights approach towards addressing such problems is in parallel with the character of those needs. For example, the development goal of alleviating food insecurity is closely linked to the human right to food. Similarly, education, health, equality, etc., are all recognized as human rights in the ICESCR. Realizing these goals can, therefore, not be satisfactorily effective without approaching these problems as rights that demand a correlative duty and empower the rights-holders to assert human rights claims.[63]

Development work ought to respect the dignity and individual autonomy of development beneficiaries, including the poorest and the most excluded, minorities and other vulnerable groups often discriminated against. Another important value of adopting a human rights approach is that it pays attention to the most marginalised and vulnerable in the society. A HRBA will produce better focused strategic interventions that consider the differences in people's experiences and circumstances to produce more equitable outcomes.[64] It also promotes accountability, improved effectiveness and transparency of action. According to Sengupta, the usefulness of a HRBA lies in two major aspects: claims and processes.[65] The HRBA engenders a root cause strategy, and redefines the nature of the problem and the aims of the development enterprise into claims, duties, and mechanisms that can promote respect and adjudicate the violation of rights.[66] Accordingly, there ought to be methods to enable individuals hold duty bearers to account. Such means do not involve only legal remedies from lawsuits. It includes many forms of social counter-power, administrative mechanisms, open discussions, and shared ideological constraints.[67]

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[62] *Ibid*. See also Arjun Sengupta, "Realizing the right to development" (2000) 31:3 Development and Change 31 553-78.
[63] *Ibid* [Arjun].
[64] *Supra* note 41 at 671.
[65] *Supra* note 62.
[66] See Anna Persson & Martin Sjöstedt, "Responsive and Responsible Leaders: A Matter of Political Will?" (2012) 10:3 Perspectives on Politics 617–632.
[67] *Ibid* at 603.

Although States may have the capacity to fulfil obligations, some often do so only after being pressured by rights holders. To this end, human rights are essentially concerned with enlivening the responsiveness and sense of accountability of people in positions of responsibility and authority, as well as encouraging people to identify themselves as rights claimants and voice their own claims, thus strengthening avenues to challenge performance failures.[68] Cornwall & Nyamu-Musembi affirm that a HRBA provides a means for increasing the accountability of States and non-State actors, and increasing the likelihood that policy measures will be implemented in practice.[69] As such, HRBAs can work to sharpen the political edges of participation, and to make critical linkages between participation, accountability and citizenship.[70] It does not only identify the entitlements of rights-holders and corresponding obligations of duty-bearers, it further strengthens the capacities of rights-holders to make their claims, and of duty-bearers to meet their obligations. This entails providing adequate infrastructure to aid accountability, participation and transparency, and equipping rights-holders by providing opportunities to empower themselves. HRBAs indicate a stronger commitment to systematically taking human rights into account in development.[71] The move from needs to rights, and from charity to duties, also implies an increased focus on accountability.[72] Consequently, it guarantees better processes and outcomes for individuals, who are the targets of development projects.

The HRBA is only practicable within a system of government that respects and fosters human rights. Democracy is necessary for ensuring regard for individual rights and freedoms. Rule of law, which is only operational in a democratic system, increases the prospects for limitations on public authority; without it, there will be no structures, institutions and mechanisms for

[68] See Caroline Moser, "Power Relations and Poverty Reduction" in Ruth Alsop, ed, *Power, Rights, and Poverty Reduction: Concepts and Connections,* (Washington, DC: World Bank, 2005) 29-50 at 33-34.
[69] See Andrea Cornwall & Celestine Nyamu-Musembi, "Putting the 'Rights-Based Approach' to Development into Perspective" (2004) 25:8 Third World Quarterly 1415-1437 at 1417. See also Clare Ferguson, *Global Social Policy Principles: Human Rights and Social Justice* (London: DFID, 1999) at 23.
[70] *Supra* note 45 at 1418.
[71] See Celestine Nyamu-Musembi and Andrea Cornwall, "What is the 'Rights-Based Approach' All About? Perspectives from International Development Agencies (2004) IDS Working Paper 234 (Institute of Development Studies, Brighton, Sussex) at 23 & 45.
[72] See Peter Uvin, "From the Right to Development to the Rights-Based Approach: How 'Human Rights Entered Development" (2007) 17:4-5 Development in Practice at 602.

respecting human rights and ensuring accountability.[73] The capacity of individuals and institutions must also be strengthened to perform their roles effectively. Mechanisms that foster accountability in IHRL include judicial and quasi-judicial institutions like the International Court of Justice (ICJ), the Human Rights Committee, the various regional human rights commissions and courts, treaty oversight bodies, and countries' national judicial systems and oversight mechanisms.[74] States are also increasingly accountable to the international community through the Universal Periodic Review, during which they declare the actions that they have taken to improve human rights situations in their countries and to fulfill their human rights obligations.[75] Also, Non-Governmental Organisations (NGOs) play an instrumental role in promoting human rights and holding governments accountable for their decisions through independent monitoring, naming and shaming, human rights litigation, and influencing policy changes at both domestic and international levels.[76] By monitoring activities and bringing to light human abuses, NGOs expose the gap in State promises and the realities on ground.

### 2.3.1 Criticism and Limitations of a Human Rights Approach

The HRBA is not devoid of criticisms. Critics have termed this paradigm a rhetorical repackaging of existing approaches to development,[77] and question its effectiveness, as to whether it produces any difference in the impact on target beneficiaries of development projects. Despite the strengths of this approach, the human rights concept is criticised for its origins, lack of cross-cultural application, challenges in its operationalisation, and a lack of mechanism for implementation/enforcement, amongst others. Human rights critics challenge the universal

[73] See Beth Simmons, *Mobilizing for Human Rights: International Law in Domestic Politics* (Cambridge: University Press, 2009) 24-36.
[74] Oversight mechanisms include Human Rights Commission, Ombudsman, Truth and Reconciliation Commissions, etc.
[75] See United Nations Human Rights Council, "Universal Periodic Review", online: <www.ohchr.org/en/hrbodies/upr/pages/uprmain.aspx> accessed 10 September 2020. See also Humberto Rivera, "The UN Human Rights Council: Achievements and Challenges in Its First Decade" (2018) in: Oberleitner G. (eds) International Human Rights Institutions, Tribunals, and Courts. International Human Rights. (Singapore: Springer, 2018) 49-68 at 56-57.
[76] See Peter Spiro, "NGOs and Human Rights: Channels of Power" (2009) Legal Studies Research Paper Series, Research Paper No. 2009-6 in Research Handbook on Human Rights (Edward Elgar, forthcoming 2009) at 8-17. See also *Supra* note 73 at 24-36.
[77] See Peter Uvin, "On High Moral Ground: The Incorporation of Human Rights by the Development Enterprise" (2002) XVII The Fletcher Journal of Development Studies at 1-11 at 5.

concept of human rights because of its historical development and the dominance of Western States in its creation. Brems notes that owing to its Western history, human rights cannot be characterized as universal- that it is both historically and conceptually Western.[78] Kennedy argues that although human rights ideas can be found in various cultural traditions, the particular form that these ideas are given in the international human rights movement is the product of a particular historical event: "post-Enlightenment, rationalist, secular, Western, modern and capitalist."[79] This critique feeds off into arguments on the influence of Western culture on the formulation of human rights and how this development fails to recognise differences in cultures across the world.[80] Kennedy affirms this as he states that "Western liberalism has marked the ideology, ethics, aesthetic sensibility, and political practice of the human rights movement."[81] Because moral claims derive their meaning and legitimacy from the cultural tradition in which they are embedded, "universal" human rights are, above all, an expression of Western values derived from the Enlightenment.[82] Relativist critics reject the universality of human rights and term the human rights movement as cultural imperialism. In this light, Fischer argues that rights-based approaches may become a tool for neoliberalism, used to promote "target-based notions of social rights rather than the development of universal coverage."[83]

Although the successes of the international human rights regime are widely acknowledged,[84] there are concerns about the effectiveness and limitations of the language of human rights. These concerns include the overly individualistic nature of human rights, its state-centric nature, and its reduction of ideals of justice and human dignity to purely legal terms.[85] With regard to the individualistic concern, Kennedy argues that the focus on individuals blunts awareness of diversity, continuity of human experience, and the human rights lens may miss broader and

[78] See Eva Brems, *Human Rights; Universality and Diversity* (Martinus Nijhof, 2001) at 8.
[79] See David Kennedy, *The Dark Sides of Virtue* (Princeton University Press, 2011) at 18.
[80] See Abdullahi An-Na'im, *Human Rights in Cross-Cultural Perspectives* (University of Pennsylvania Press, 1995) at 20.
[81] *Supra* note 79.
[82] *Ibid*.
[83] See Fischer A., "The Political within the De-Politicised: Poverty Measurement, Implicit Agendas and the MDGs. in M. Langford, A Sumner & AE Yamin, eds. *The Millennium Development Goals and Human Rights: Past, Present and Future* (Cambridge, UK: Cambridge University Press, 2013) 119-42. See generally Malcolm Langford, "Critiques of Human Rights" (2018) 14 Annual Review of Law and Social Science 69-89.
[84] See Jacqueline Mowbray, "The Right to Food and the International Economic System: An Assessment of the Rights-Based Approach to the Problem of World Hunger" (2007) 20:3 LJIL 545 at 557.
[85] *Ibid* at 558.

structural features of societal problems.[86] Mowbray further notes that the individualistic nature of human rights "may not provide a framework for understanding and addressing harms produced as a result of interactions between different actors, or as an unintended consequence of well-meaning measures."[87] Consequently, the language of human rights tends to not to provide effective remedies within complex cases of inequalities and injustice.[88]

A further concern is that the state-centric nature of IHRL limits its effectiveness, especially within an increasingly globalised world where non-state actors play significant roles in influencing human rights compliance and violations. Kennedy asserts that human rights "views the problem and solution too narrowly."[89] In this regard, Clapham notes that human rights treaties were mainly developed by States as "sets of obligations for themselves" thus, the associated monitoring and accountability mechanisms are based on traditional rules of State responsibility.[90] Mowbray further argues that in light of the focus of human rights on State responsibility for rights violations, the rights-based approach may not be a particularly effective tool for challenging the activities of non-State actors.[91] However, recent developments within international law has sought to create a basis for extending human rights violations to non-State actors.[92]

In spite of these limitations, a significant reason for a HRBA, in addition to some mentioned above, is that it represents a comprehensive avenue for evaluating the policies and actions of governments in relation to their human rights obligations contained in various instruments.[93]

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[86] See David Kennedy, "The International Human Rights Movement: Part of the Problem?" (2002) 15 Harv. Hum. Rts. J. 101 at 112.
[87] *Supra* note 84 at 558.
[88] *Ibid.*
[89] *Supra* note 86 at 109.
[90] See Andrew Clapham, "Non-State Actors" in Daniel Moeckli *et al*, eds, *International Human Rights Law, 3rd Ed.* (Oxford University Press, 2017) at 558.
[91] Additionally, Mowbray argues that the human rights discourse may be ill-suited to attacking existing relations of power and wealth, and to achieving redistributive change. See Jacqueline Mowbray, "The Right to Food and the International Economic System: An Assessment of the Rights-Based Approach to the Problem of World Hunger" (2007) 20:3 LJIL 545 at 558.
[92] See generally Andrew Clapham, *Human Rights Obligations of Non-State Actors* (Oxford University Press, 2006).
[93] See Dejo Olowu, "Human Development Challenges in Africa: A Rights-Based Approach" (2004) 5 San Diego Intl LJ 179 at 204.

## 2.4 Food Security and Human Rights

The multidimensional nature of the concept of food security has evolved over time, from the availability of enough food to meet basic consumption requirements, to encompassing notions of adequacy, accessibility, utilisation, and stability.[94] According to the Food and Agriculture Organisation of the United Nations (FAO), food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.[95] This conceptualisation of food security parallels the definition of the human right to food. This section will show the relationship between the concepts of food security and human rights, and reveal the import of a human rights approach to food security.

### 2.4.1 The Concept of Food Security

The concept of food security and approaches to achieving a food secure world has advanced over the years. Food security was initially understood solely from the availability perspective, which focused on the "disequilibrium between population and food."[96] This links the realisation of food security to the provision or availability of adequate food for the existing population. This outlook to food security was well reflected in the definition of food security captured in terms of food supply and given at the World Food Conference of 1974.[97] In subsequent years, the understanding of food security advanced to include other dimensions such as food access, stability, and utilization, as captured in preceding sections of this work.

Later developments in the conceptualization of food security considered the importance of the supply and demand of food in ensuring food security. In 1983, analyses of food security by the

[94] See Andrew Schmitz, Lynn Kennedy & Troy Schmitz, *Food Security in an Uncertain World: An International Perspective, Frontiers of Economics and Globalization*, (Bingley, U.K.: Emerald Group Publishing Limited, 2015) at 50.
[95] See World Food Summit, Plan of Action, 13 November 1996.
[96] See Francesco Burchi & Pasquale De Muro, "A Human Development and Capability Approach to Food Security: Conceptual Framework and Informational Bases" (2012) 009 WP UNDP at 2.
[97] At that Conference, food security was defined as the "availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" See UN General Assembly, World Food Conference, 17 December 1974, A/RES/3348.

FAO focused on food access, leading to a definition based on the balance between the demand and supply sides of food security: "ensuring that all people at all times have both physical and economic access to the basic food that they need."[98] The traditional view of food security as a food availability problem gradually weakened as the FAO began to argue that food insecurity is not only "a problem of food availability, but also a function of poverty and deprivation", and that "malnutrition could persist despite an increase in overall food supplies."[99] The FAO propagated the inclusion of other dimensions, widening the scope of food security. This was especially necessitated by the 2007-2008 global food crisis, during which world food prices increased dramatically.[100] Also, reports in recent years indicate that the number of hungry people in the world continue to be on the rise despite the production of sufficient food to feed the global population.

The poverty and deprivation perspective was also captured in the broader and advanced definition of food security proffered at the 1996 World Food Summit. This definition includes, besides availability, other fundamental dimensions of food security, such as access to, utilization and stability of food.[101] This conceptual development of food security resulted in a shift away from viewing food insecurity as a problem of shortages in aggregate food supply towards people's ability to access and utilise the food they need. Therefore, this approach amplified the poverty gap that hinders access to food and its impact in attaining all other dimensions of food security. Hence, discussions around food security now consider socio-economic issues and the role of poverty and marginalisation in aggravating hunger and malnutrition.

The FAO defines food security as "when all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life."[102] This definition encompasses several dimensions,

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[98] See Food and Agriculture Organisation, "Food Security" (2006) 2 Policy Brief at 1.
[99] See Hans Page, Global Governance and Food Security as Global Public Good" (2013), online (pdf): *Center on International Cooperation* <cic.nyu.edu/sites/default/files/page_global_governance_public_good.pdf> at 4, accessed 05 May 2020.
[100] See United Nations, "The Global Food Crises", online (pdf): <www.un.org/esa/socdev/rwss/docs/2011/chapter4.pdf> accessed 19 July 2020.
[101] It provides that "food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life" *Ibid.*
[102] See World Food Summit, Plan of Action, 13 November 1996.

levels, and components of food security. It first recognises the individual as the ultimate object of food security, emphasising individuals as primary beneficiaries of food security. It also considers the availability of food; physical, social, and economic access to food; food safety; and sufficient quantity and quality of food to meet nutritional requirements, thereby linking the definition of food security to crucial health and productivity outcomes. These facets of food security are required to be present at all times to ensure that food is secure for both present and future generations. The notion of food sustainability aptly features in the FAO's definition, which reiterates the requirement to have available, accessible, nutritious, adequate, and culturally preferred food at all times.

As the conceptualization of food security evolved over time, so has the approaches to solving the problem of food insecurity developed and advanced over the years. Sen's entitlement approach reinforced the linkage of food insecurity and poverty, as it challenged the availability perspective and moved the focus from food availability to ensuring people's access to food.[103] In this light, Drèze and Sen affirm that "hunger is not simply a manifestation of an involuntary lack of food, but rather, hunger is a result of entitlement failure."[104] As noted by Burchi and De Muro, "the entitlement approach contributed to re-address the problem of hunger and famine by diminishing the role of aggregate food supply and giving more relevance to the socio-economic conditions of people".[105] A capability approach was further developed by Sen. This approach focuses on expanding "the substantive freedoms that one enjoys, to lead the kind of life he or she has reason to value, or the real actual possibilities open to a person."[106] Capability involves a person's

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The Food and Agriculture Organisation (FAO) measures the level of food insecurity by considering both stable access to food and the prevalence of undernourishment, which reflects those whose habitual food consumption is insufficient to provide the dietary energy levels required to maintain a normal, active and healthy life. See Food and Agriculture Organisation, "Sustainable Development Goals: Indicator 2.1.2- Prevalence of Moderate or Severe Food Insecurity in the Population Based on the Food Insecurity Experience Scale", online: *FAO* <www.fao.org/sustainable-development-goals/indicators/212/en/> accessed 12 May 2020.

[103] See Jean Dréze J and Armatya Sen, *Hunger and Public Action* (Oxford, England: Clarendon Press, 1989) at 5.

[104] *Ibid.* See also Mariana Chilton and Donald Rose, "A Rights-Based Approach to Food Insecurity in the United States" (2009) 99:7 American Journal of Public Health 1203-1211 at 1204. Entitlement is defined as "the set of alternative. commodity bundles that a person can command in a society using the totality of rights. and opportunities that he or she faces". See Armatya Sen, *Resources, Values and Development* (Oxford, England: Basil Blackwell, 1984) at 497.

[105] *Supra* note 60 at 11.

[106] *Ibid.*

ability to pursue and realise her goals, including nutritional goals. It is the expansion of this ability that strengthens people's capability to be food secure.

A human rights approach to food security further strengthens the shift from an availability focused era to tackling food access issues and empowering individuals in the food security movement. It applies fundamental human rights principles of non-discrimination, transparency, equity and inclusion, accountability, and participation in ensuring a food secure world. A human rights-based approach has been recognized as imperative to eliminate hunger and provide access to healthy, nutritious and affordable food for all.[107] This approach to food security is dominated by the right to food, defined by Ziegler as "the right to have regular, permanent and unrestricted access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensure a physical and mental, individual and collective, fulfilling and dignified life free of fear."[108] Since the inception of the human rights approach to food security, there has been significant progress at different levels to respect, protect, and fulfill the right to food.

### 2.4.2 The Right to Food Under International Law

Since the inception of the international human rights regime, the right to food has been present, and is continually being incorporated into States' constitutions as local legislations imposing specific obligations upon governments.[109] The right first found expression in Article 25 of the Universal Declaration of Human Rights (UDHR), which includes the right food in its rendering of the right to a standard of living adequate for health and well-being.[110] The International Covenant on Economic Social and Cultural Rights (ICESCR) subsequently codified this

[107] See Social Watch, "United Nations: Need for Rights-Based Approach to Food Security" (29 October 2014), online (blog): <www.socialwatch.org/node/16696>.
[108] *Ibid.*
[109] For example, in 2001, Brazil included food as a social right in its domestic constitution. See also Constitution of the Republic of South Africa, 1996. See also Smita Narula, "Reclaiming the Right to Food as a Normative Response to the Global Food Crisis" (2010) 13:2 Yale Human Rts & Dev LJ 403 at 404.
[110] UN General Assembly, Universal Declaration of Human Rights, 10 December 1948, 217 A (III), Article 25.

provision and, in addition, recognized the right of everyone to be free from hunger.[111] Similar provisions of this right are in the Convention on the Rights of the Child,[112] Geneva Conventions Relating to the Protection of Victims of International and Non-International Armed Conflicts,[113] and other regional human rights treaties.[114] Also on the humanitarian front, the United Nations (UN) Security Council has adopted a resolution condemning the starvation of civilians as a method of warfare.[115] The right to food is also implicitly recognized through other rights. The African Commission on Human and Peoples' Rights has interpreted the right to food as implicitly protected under the African Charter on Human and Peoples' Rights through the right to life, the right to health, and the right to economic, social and cultural development.[116] Likewise, the Human Rights Committee affirms that the protection of the right to life requires States to adopt positive measures to eliminate malnutrition.[117]

The ICESCR deals more comprehensively with the right to food than other international legal instruments. In addition to the right to adequate food, it introduces the concept of freedom from hunger. Freedom from hunger is considered to be the minimum level that should be secured for all, independent of the level of development of a given State.[118] But the right to food not only implies being free from hunger, it includes the provision of important elements of food practices, education on hygiene, training on nutrition, and concerns such as provision of health care, including breastfeeding.[119] The former UN Special Rapporteur on the right to food defined the

[111] UN General Assembly, International Covenant on Economic, Social and Cultural Rights, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3, Article 11.
[112] UN General Assembly, Convention on the Rights of the Child, 20 November 1989, United Nations, Treaty Series, vol. 1577, p. 3, Article 24(2)(c).
[113] International Committee of the Red Cross (ICRC), Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of Non-International Armed Conflicts (Protocol II), 8 June 1977, 1125 UNTS 609, Article 54(1).
[114] African Charter on the Rights and Welfare of the Child, 11 July 1990, CAB/LEG/24.9/49 (1990); Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa, 11 July 2003; Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, 16 November 1999, A-52; Convention on the Elimination of All Forms of Discrimination Against Women, 18 December 1979, United Nations, Treaty Series, vol. 1249, p. 13, Article 12(2).
[115] Resolution 2417 (2018), Adopted by the Security Council at its 8267th meeting, on 24 May 2018.
[116] The Social and Economic Rights Action Center and the Center for Economic and Social Rights v. Nigeria, African Commission on Human and Peoples Rights, Communication No. 155/96, para. 64.
[117] UN Human Rights Committee (HRC), CCPR General Comment No. 6: Article 6 (Right to Life), 30 April 1982, para. 5.
[118] See Food and Agriculture Organisation, "Right to Food: Making it Happen, Progress and Lessons Learnt Through Implementation" (2011), online (pdf): <www.fao.org/3/i2250e/i2250e.pdf> at 3, accessed 11 May 2020.
[119] *Ibid.*

right to food as "the right to have regular, permanent and unrestricted access, either directly or by means of financial purchases, to quantitatively and qualitatively adequate and sufficient food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensure a physical and mental, individual and collective, fulfilling and dignified life free of fear."[120]

According to the Committee on Economic, Social and Cultural Rights (CESCR), the right to adequate food is realized when every man, woman and child, alone or in community with others, have physical and economic access at all times to adequate food or means for its procurement.[121] Furthermore, the CESCR stresses that the right to adequate food "shall not be interpreted in a narrow and restrictive sense which equates it with a minimum package of calories, proteins and other specific nutrients."[122] This means that it encompasses the right of an individual to have access to the resources necessary to produce, earn and purchase adequate food, not only to prevent or satisfy hunger but also to ensure good health and well-being.

#### 2.4.2.1 Normative Contents of the Right to Food

The right to food contains certain normative attributes required to be present for the full realization of the right. These are recognized as the *availability, accessibility, adequacy, and sustainability of food.*[123] The CESCR considers the right to adequate food as implying the availability[124] of food in a quantity and quality sufficient to satisfy the dietary needs[125] of

[120] See Jean Ziegler, "Economic, Social and Cultural Rights: The Right to Food. Report by the Special Rapporteur on the Right to Food", submitted in accordance with Commission on Human Rights Resolution 2001/25: United Nations General Assembly, 58th Session. 2002 January 10.
[121] See UN CESCR General Comment No. 12 at para. 6.
[122] *Ibid*. See also *Supra* note 66 at para. 6.
[123] *Ibid*.
[124] "Availability refers to the possibilities either for feeding oneself directly from productive land or other natural resources, or for well-functioning distribution, processing and market systems that can move food from the site of production to where it is needed in accordance with demand". See UN CESCR General Comment No. 12 at para. 12.
[125] "Dietary needs imply that the diet as a whole contains a mix of nutrients for physical and mental growth, development and maintenance, and physical activity that are in compliance with human physiological needs at all stages throughout the life cycle and according to gender and occupation". See UN CESCR General Comment No. 12 at para. 9.

individuals, free from adverse substances,[126] and acceptable within a given culture.[127] Such available food should be accessible[128] in ways that are sustainable and that do not interfere with the enjoyment of other human rights.[129] While the concept of adequacy accommodates, *inter alia,* the nutritional and dietary requirements of food, and the prevailing economic, cultural, climatic, ecological and other conditions, the notion of sustainability is intrinsically linked to the notion of availability and accessibility of adequate food for both present and future generations.[130] Contrary to common misconceptions, the right to food does not imply that individuals have the right to be fed. Rather, it is the right to feed oneself in dignity; to live in conditions that allow individuals to physically and economically access food. It requires States to create an enabling environment in which people can use their potential to produce and procure adequate food for themselves and their families.

Although the focal right discussed in this section is the right to food, it does not connote that the right to food is the only human right that intersects with food security issues. Moreover, a human right cannot be viewed in isolation of other human rights, as human rights are interdependent and indivisible. The fulfilment of one right often depends, wholly or in part, upon the fulfilment of others. For instance, the fulfilment of the right to food may depend, in certain circumstances, on the fulfilment of the right to an adequate standard of living, to education or to information, etc. Maklem elucidated on this concept of interdependency by emphasizing that rights' interdependence does not amount to a precondition of the realization of other rights but that the realization of each right is necessary to the realization of all others.[131] All human rights are equal in terms of their status and importance, and the content of each intrinsically relates to and

[126] "Free from adverse substances sets requirements for food safety and for a range of protective measures by both public and private means to prevent contamination of foodstuffs through adulteration and/or through bad environmental hygiene or inappropriate handling at different stages throughout the food chain; care must also be taken to identify and avoid or destroy naturally occurring toxins". See UN CESCR General Comment No. 12 at para. 10.
[127] "Cultural or consumer acceptability implies the need also to take into account, as far as possible, perceived non-nutrient-based values attached to food and food consumption and informed consumer concerns regarding the nature of accessible food supplies". See UN CESCR General Comment No. 12 at para. 11.
[128] Accessibility encompasses both economic and physical accessibility. See UN CESCR General Comment No. 12 at para. 13.
[129] *Supra* note 60.
[130] *Ibid* at 7.
[131] See Patrick Macklem, "Human Rights in International Law: Three Generations or One?" (2015) 3:1 London Review of International Law 61-92 at 74.

mutually reinforces other human rights.[132] Thus, the decision to discuss the right to food here does not exclude the importance of other human rights that are indispensable to the realization of food security. As affirmed by the CESCR, the right to adequate food is indivisibly linked to the inherent dignity of the human person and is indispensable for the fulfilment of other human rights enshrined in the International Bill of Human Rights.[133]

### 2.4.3 The Relationship between Food Security and the Right to Food: Similarities and Distinctiveness

From the discussions above, commonalities can be observed between the separate notions of food security and human rights. Even their definitions bear substantial similarities.[134] This raises questions like whether the right to food is realised once food security is achieved or vice versa. Are the two concepts referring to same outcomes differing only in approach? In order to answer this question, I will briefly highlight similarities between food security and human rights, most of which are evident in the preceding sections, and then, underscore the differences between these two concepts, with attention to the usefulness of the HRBA in achieving food security.

The concepts of the right to food and food security concern people's basic need for adequate food and nutrition. Evidence of closeness between the two concepts lies in the respective definitions of the two terms: the CESCR defines the right to food as the right of everyone to have physical and economic access at all times to food in adequate quantity and quality or to means of its procurement; while the FAO defines Food Security as existing when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.[135] They both contain the elements of food availability, accessibility, safety and nutrition, cultural acceptability, and sustainability. Another similarity is that the main unit of relevance for both concepts is the individual. The right

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[132] *Ibid.*
[133] See U.N. Economic & Social Council (ECOSOC), Committee on Economic, Social & Cultural Rights (CESCR), General Comment No. 12: The Right to Adequate Food, 6, U.N. Doc. E/C.12/1999/5 (May 12, 1999) para 4.
[134] The CESCR's defines the right to food as "the right of everyone to have physical and economic access at all times to food in adequate quantity and quality or to means of its procurement." Food Security, on the other hand, is defined as existing "when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."
[135] *Supra* note 121 and 95.

to food applies to the individual or specific groups of persons, as the case may be.[136] Even though food security applies to various levels (individual, household, local, national, regional or global), food security at the individual level positively affects food security outcomes on other levels.[137]

Despite the similarities that these two concepts share, they are both distinct notions. The most significant difference is in their fundamental nature as a legal concept and policy concept respectively. While the right to food aims at realising people's human rights and receives flavour from treaty, customary international law, as well as some domestic laws, food security is a policy goal and is only contained in non-binding instruments.[138] Hence, violations of food security cannot be actionable or be the subject of judicial or quasi-judicial remedies.[139] Food security is a concept based on needs, which sets goals to be realised through policies and programmes. The right to food is a legal concept involving rights-holders and duty-bearers.[140] As opposed to food security, the implementation of the right to food is anchored on human dignity and involves the application of general human rights principles, as mentioned earlier in this chapter.[141] Mechlem acknowledges that "it is through a rights-based approach that food security is complemented by dimensions of dignity, rights acknowledgment, transparency, accountability, and empowerment."[142]

The absence of food security hinders the realisation of the right to food, but it is important to note that food security can be achieved without realising the right to food. For example, discrimination in the process of making food available, accessible, safe and sustainable is a violation of the right to food, equality and non-discrimination. All rights that intersect with and

[136] Specific groups of persons refer to rights belonging to groups of people, like minority rights, stateless persons, etc.
[137] See Kerstin Mechlem, "Food Security and the Right to Food in the Discourse of the United Nations" (2004) 10:5 European Law Journal 631-648 at 643.
[138] *Ibid.*
[139] *Ibid*.
[140] See Food and Agriculture Organisation, "The Right to Food within the International Framework of Human Rights and Country Constitutions" (2014), online (pdf): <www.fao.org/3/a-i3448e.pdf> at 9, accessed 12 May 2020.
[141] Another distinction is found in the unit of analysis of the two concepts. Whereas food security can be measured on an individual, household, local, national, regional and global level, the right to food as a human right applies to only individuals and, in specific cases, to the group level as it concerns group rights.
[142] *Supra* note 137 at 648.

are necessary for realising the right to food must be taken into account. To ensure that the rights of every individual and groups of persons are considered and realised in the process of achieving food security, it is essential that a HRBA to food security is adopted. Food security objectives and processes may range from moral grounds to more economic reasons, but the right to food perspective views the problem of food insecurity as a violation of the dignity of persons.[143] It is hinged exclusively on the idea of human dignity and recognises the universal, interdependent and inalienable character of all human rights.[144]

### 2.4.4 State Obligations under a Human Rights Approach to Food Security

The human rights approach is rooted in respect for IHRL. Central to the HRBA to food security is the responsibility that States must respect their obligations under IHRL in the process of ensuring the availability, accessibility, safety and nutrition, and sustainability of food. These obligations include the progressive adoption of measures in line with the principles of IHRL, the duty to respect, protect and fulfil the right to food and other human rights, to recognise the right to food within their domestic law, and to ensure international cooperation and assistance.[145] In line with core IHRL principles, the FAO notes the obligations of States to ensure that:

a. individuals and groups can actively, freely, effectively and significantly participate in decisions that affect their ability to feed themselves;
b. States and non-State actors must be accountable and individuals are able to challenge both the process and content of the decisions that affect their livelihoods;
c. there are no limitations on the right to food on the basis of race, sex, ethnicity, etc., and in certain cases, this could entail treating certain people or groups differently from the rest;
d. information regarding activities and policies, laws and budgets prepared within the framework of the right to food is published in a language accessible to the public and disseminated through appropriate media;

[143] *Supra* note 137.
[144] *Supra* note 137 at 643.
[145] *Supra* note 140.

e. measures affecting the livelihoods of people and their ability to exercise the right to food are adopted in a manner that respects the absolute value of the person, based on the simple fact that they are human beings and not on the basis of their social status or special attributes;
f. people are provided with the ways and means of choosing and influencing decisions that affect their livelihoods;
g. States legitimately exercise authority in strict accordance with laws in force and must respect established implementation procedures.[146]

*i. Progressive realisation and international cooperation*

The right to food engenders a core obligation for State parties to take appropriate measures to mitigate and alleviate hunger.[147] As is required for rights contained in the ICESCR, this principal obligation requires States to take steps to achieve progressively the full realization of the right to adequate food.[148] This imposes a duty on States to move as expeditiously as possible, to the maximum of its available resources, towards the goal of the right. In undertaking these steps, the ICESCR mandates States to work individually and through international assistance and cooperation.[149] Specifically, Article 11(2) of the ICESCR obliges State parties to take measures, including through international cooperation, to improve methods of production, conservation and distribution of food, and to ensure an equitable distribution of world food supplies in relation to need. Hence, the CESCR has noted that a State claiming that it is unable to carry out its obligation for reasons beyond its control has the burden of proving such inability and also that it had unsuccessfully sought to obtain international support to ensure the availability and accessibility of the necessary food.[150] The role of international cooperation and assistance under IHRL and with respect to the right to food is also reflected in other international legal

[146] *Supra* note 140 at 8.
[147] Art. 11(1), ICESCR.
[148] Art. 2(1), ICESCR.
[149] Art. 2(1) & Art. 11(10), ICESCR.
[150] *Supra* note 37 at para. 17.

instruments and policy documents such as the United Nations Charter,[151] the UDHR,[152] and the Rome Declaration on World Food Security.[153]

The ICCPR and ICESCR provide somewhat different natures of States' obligation. While the obligations of States under the ICCPR are immediate in their satisfaction, the obligations in the ICESCR are more progressive in nature. This progressive character should not be misconstrued as excusing States from fulfilling their obligations under international human rights law. Even though the ICESCR embodies an obligation for the progressive realization of rights contained therein and acknowledges the possibility of resource constraints due to the limits of available resources, it also imposes obligations which are of immediate effect. For instance, the obligation to take steps to the maximum of its available resources, and guarantee the elimination of discrimination requires immediate action.[154] Therefore, States are not allowed to be inactive by reason of the progressive realization of ESCRs, rather, they are obliged to take constant efforts to improve the enjoyment of the rights within a reasonably short time.

*ii. Duty to respect, protect and fulfil the right to food*

For every human right, States bear corresponding duties to respect, protect and fulfil them. Through the ratification of international human rights law treaties, States assume this tripartite obligation applicable to all human rights- both civil and political rights, and economic, social and cultural rights. These obligations universally apply to all rights and entail a combination of negative and positive duties. Human rights obligations are increasingly extending to Non-State actors. The Guiding Principles on Business and Human Rights, although non-binding, elaborates on the State's duty to protect human rights, the corporate responsibility to respect human rights, and the need for greater access to remedy for victims of business-related human rights abuse.[155] This means that business enterprises should act with due diligence to avoid violating the rights of

[151] United Nations, Charter of the United Nations, 24 October 1945, 1 UNTS XVI.
[152] UN General Assembly, Universal Declaration of Human Rights, 10 December 1948, 217 A (III).
[153] Rome Declaration on World Food Security and World Food Summit Plan of Action: World Food Summit, 13-17 November 1996, Rome, Italy.
[154] Art. 2(1) & (2), ICESCR.
[155] *Supra* note 38.

others and should address adverse human rights impacts caused by activities with which they are involved.[156]

The obligation to respect connotes the responsibility of States to refrain from actions that interfere or curtail the enjoyment of human rights. The obligation to protect also requires States to protect rights holders against human rights abuses. This could be done, for example, by legislating the right to food and providing effective remedies for violations of the right. The African Commission on Human and Peoples Rights, in *SERAC v. Nigeria*, described this obligation as necessitating the creation and maintenance of an atmosphere or framework by an effective interplay of laws and regulations to enable individuals freely realize their rights and freedoms.[157]

In pursuance of the duty to protect, States are obliged to adopt measures to protect rights holders against political, economic, cultural and social interferences. This could also be done by promoting the enjoyment of human rights through education, raising awareness, promoting tolerance, creating and strengthening necessary infrastructure for fostering human rights. They are to ensure that enterprises or individuals do not take any actions that deprive individuals of their access to adequate food.

Finally, the obligation to fulfil means that States must take positive actions to facilitate the enjoyment of human rights. Such actions may include the examples for promoting the enjoyment for human rights referred above, it could also involve direct provision of resources like food, social programs, etc. to aid the fulfilment of certain rights. These obligations manifest in several ways as it concerns different human rights. The obligation to fulfil has been often misconstrued within the context of the right to food as implying the duty of the State to directly provide food for all rights beneficiaries. Such duty will only arise in peculiar circumstances in which

[156] See Andrew Clapham, "Human Rights Obligations for Non-State Actors: Where are We Now?", Keynote address to the International Conference Organized by the World Organisation against Torture, 4 October 2005 at 11.
[157] See The Social and Economic Rights Action Center and the Center for Economic and Social Rights v. Nigeria, African Commission on Human and Peoples Rights, Communication No. 155/96.

individuals are, for reasons beyond their control, such as conflicts and natural or other disasters, unable to access adequate food.[158]

[158] See Committee on Economic, Social and Cultural Rights, General Comment No. 12: The Right to Adequate Food (Art. 11) Adopted at the Twentieth Session of the Committee on Economic, Social and Cultural Rights, on 12 May 1999 (Contained in Document E/C.12/1999/5).

## 3.0 Climate Change and the COVID-19 Pandemic: Food Security Impacts

Against the backdrop of the normative content of the right to food and the dimensions of food security, this chapter will look at how the climate crisis and the recent health crisis threaten the right to food as it endangers food security. What follows is an overview of the impacts of the crises on food systems. By viewing the impacts on food availability, access, utilisation and stability, the effects reflect the threats that the problems pose to realising the right to food.

The challenges of achieving food security interconnect with development issues, social and environmental factors, economic growth, security, poverty, and health. Problems arising in these and other related aspects of the society impact positively or negatively, as the case may be, on food security. Because the food system interacts with other systems, like the health system, climate system, trade system, energy system, etc., a structural change in the food system might originate from a change in another related system. This is evident in the impacts that climate change and the novel coronavirus (COVID-19) pandemic produce on food security. Over the years, scholars and practitioners have researched the relationship between climate change and agriculture, climate change impacts on food systems, and vice versa. The Intergovernmental Panel on Climate Change (IPCC) particularly reinforces the adverse effects that climate change is already causing and is predicted to inflict on food systems across the world.[159] As the global community still grapples with adapting to the impacts of climate variability on food security, access to food has now faced even increased threat as the COVID-19 pandemic hits the world.

More than 820 million people go to bed on an empty stomach each night. For these people, and many more, access to food in adequate quantity and quality is a challenge, and they live a life of perpetual hunger.[160] Climate change and the COVID-19 pandemic impact food security and threaten the realisation of the right to food, particularly for the world's most impoverished and rural population, through various pathways. In turn, these impacts have a negative influence on

[159] *Supra* note 1.
[160] See Food and Agriculture Organisation, "Sustainable Development Goals: Indicator 2.1.1- Prevalence of Undernourishment", online: *FAO* <www.fao.org/sustainable-development-goals/indicators/211/en/> accessed 15 June 2020.

the protection of human rights; they undercut the progress made thus far in achieving the zero hunger sustainable development goal and call for specific measures by States in respecting, protecting and fulfilling human rights. This section explores diverse ways through which the climate and health crises aggravate food insecurity and threaten the right to food. It examines the impacts of climate change and the coronavirus pandemic on the different dimensions of food security – as well as the normative contents of the right to food – and their consequential effects on human rights.

### 3.1 Impacts of Climate Change on Global Food Security

Climate change is the long-term alteration of global temperature and weather patterns that results in unpredictable and severe weather patterns. The IPCC defines it as "a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties that persists for an extended period, typically decades or longer."[161] From shifting weather conditions that threaten biodiversity, to reduced agricultural yields and health impacts, climate change effects are global in scope with varied impacts in different regions across the world. Agriculture is one of the sectors most vulnerable to climate change, as it critically impacts the conditions in which agriculture and agriculture-related activities are conducted.

The food system is inextricably linked to environmental factors, and cannot be divorced from ongoing environmental issues, such as climate change. In agricultural systems across the world, animals, and even the ecosystem are adapted to prevailing environmental conditions. Therefore, an increasingly changing climate inevitably destabilises the existing agricultural systems[162] and the products produced from the system. Additionally, the adverse nature of the changes to climatic conditions exacerbates the problems associated with climate instability. The relationship between food and climate change has gained prominence over the years. It now features in recent

[161] See Field, C.B.et al, eds., "Glossary of Terms" in *Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation, A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate* Change" (Cambridge and USA: Cambridge University Press, 2012) 555-564 at 557.
[162] See Food and Agriculture Organisation, "Climate Change and Food Security: Risks and Responses", online(pdf): *FAO* <www.fao.org/3/a-i5188e.pdf> at 3, accessed 10 June 2020.

environmental and climate change-related international legal and policy documents, such as the United Nations Framework Convention on Climate Change (UNFCCC),[163] Paris Agreement,[164] and the IPCC reports.[165] These documents recognise the additional risks climate change poses to global food security and nutrition, especially with respect to people who directly depend on agriculture for their food and livelihood.

Scientific bases for understanding climate change and how it affects the environment reinforce the severity of climate change impacts on food security. The IPCC, through its assessment and special reports, provides comprehensive knowledge on climate change, its causes and impacts in various industries, including agriculture. As projected in the IPCC's Fifth Assessment Report (AR5) and affirmed in chapter five of the IPCC's Special Report, climate change undermines food security, and will further prolong existing poverty, and create new poverty traps.[166] Several variables resulting from climate change affect the food system. According to the FAO, these factors include "the $CO_2$ fertilization effect of increased greenhouse gas concentrations in the atmosphere; increasing mean, maximum and minimum temperatures; gradual changes in precipitation: increase in the frequency, duration and intensity of dry spells and droughts; changes in the timing, duration, intensity and geographic location of rain and snowfall; increase in the frequency and intensity of storms and floods; and greater seasonal weather variability and changes in start/end of growing seasons."[167]

The varied impacts of climate change on food security is evident in all sectors of the agricultural system. The food system involves all the activities and actors in production, manufacturing,

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[163] *United Nations Framework Convention on Climate Change*, 9 May 1992, 1771 UNTS 1771 art 2 (entered into force 21 March 1994) [UNFCCC].
[164] Paris Agreement, 12 December 2015, UNFCCC Conference of Parties 21, Preamble & art 2 (entered into force 4 November 2016). 2015. See also Agenda 21, UN conference on Environment & Development, Rio de Janerio, Brazil, 3-14 June 1992.
[165] See R.K. Pachauri & L.A. Meyer, eds., *Climate Change 2014: Synthesis Report,* Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, IPCC (2014). See also Cheikh Mbow et al, "Food Security", in *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems* (2019).
[166] See Climate Change 2014 Synthesis Report Summary for Policy Makers, online(pdf): *IPCC* <archive.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf> at 16, accessed 11 May 2020.
[167] See Food and Agriculture Organisation, "Climate Change and Food Security: A Framework Document" (2008), online(pdf): *FAO* <www.fao.org/3/k2595e/k2595e00.pdf> at 12 accessed 03 May 2020.

transportation, trading, consumption, and food waste.[168] The activities that occur during these processes produce food security outcomes, as well as impact the environment. While agriculture can positively impact the environment, for example, by sequestering greenhouse gases within crops and soils, or mitigating risks of flood through the adoption of certain farming practices,[169] it also generates an incredible amount of greenhouse gases (GHGs) that have far-ranging environmental effects, leading to climate change. Conversely, the interaction of climate change with food systems also leads to food insecurity through adverse impacts on the four pillars of food security: availability, accessibility, utilisation, and stability.[170]

### 3.1.1 Impacts of Climate Change on Food Availability

Climate variability adversely impacts food availability through the effects it produces on the production, storage, processing, and distribution of food. Food availability is achieved when sufficient quantities of food products, such as crops, livestock, and fisheries are consistently produced, distributed, and available to all individuals. The increasingly changing climate influences the frequency of extreme events such as drought, excessive moisture, heat waves, etc., which are critical determinants of crop and livestock production.[171] One significant means through which climate change impacts food security is its direct and indirect effects on the quantity of food produced. This could be directly on the quantity of agricultural yields due to unfavourable weather conditions, and, indirectly, through the impact of climate change on water availability and quality, pests and diseases, and pollination activities.[172] According to the IPCC Special Report, climate drivers relevant to food security and food systems include temperature-related, precipitation-related, and integrated metrics that combine temperature, precipitation, and other variables.[173] Temperature-related drivers include high temperatures affecting critical

[168] See Cheikh Mbow et al, "Food Security", in *Climate Change and Land: An IPCC Special Report on Climate Change, Desertification, Land Degradation, Sustainable Land Management, Food Security, and Greenhouse Gas Fluxes in Terrestrial Ecosystems* (2019) at 442.
[169] See Organisation for Economic Co-operation and Development, "Agriculture and the Environment", online: <www.oecd.org/agriculture/topics/agriculture-and-the-environment/> accessed 12 June 2020.
[170] *Supra* note 156 [Mbow et al].
[171] See William Easterling, "Assessing the Consequences of Climate Change for Food Security: A View from the Intergovernmental Panel on Climate Change" in Rattan Lal *et al*, eds., *Climate Change and Global Food Security* (Boca Raton: CRC Press, 2005) at 279.
[172] *Supra* note 166 at 450.
[173] *Supra* note 166.

growth periods. For example, local temperature increases of 2°C or more are projected to negatively impact wheat, rice, and maize production in tropical and temperate regions.[174] At the same time, changes in precipitation patterns evidenced through the effects on water supply, like droughts, will retard production in crop and animal husbandry.

Water, an essential input for agricultural production, plays and instrumental role in food security, and is one of the natural resources affected by climate change, through which it impacts food availability. Factors such as the amounts and patterns of rainfall, temperature, and evaporation rate, which determine water availability, are vulnerable to the increasingly changing climate.[175] Furthermore, the accumulation of carbon dioxide, methane gas, and nitrous oxide in the atmosphere lead to global warming, which changes precipitation and temperature patterns[176] and, in turn, alters the distribution of agro-ecological zones.[177] This alteration, inevitably, affects regular seasons and seasonal produce, as crops ordinarily produced during certain seasons are unable to thrive in different weather. The effect of this is also felt by farmers, particularly in developing countries, who lack adequate information to predict weather conditions that will enable them to farm accordingly.

Agriculture is the largest consumer of water and the most susceptible to climate change effects on water availability. Although personal needs account for major water usage, as individuals require water for consumption and other daily activities, agricultural production consumes more fresh water than any other human activity.[178] Agriculture uses 70 percent of all fresh water withdrawals globally and up to 95 percent in several developing countries.[179] According to the FAO, while 2 litres of water are often sufficient for an individual's daily consumption, it takes

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[174] *Supra* note 163.
[175] See David Pimentel et al, "Water Resources: Agriculture, he Environment, and Society, An Assessment of the Status of Water Resources" (1997) 47:2 BioScience 97-106 at 98.
[176] *Ibid* at 99.
[177] See Pradeep Kurukulasuriya & Shane Rosenthal, "Climate Change and Agriculture, A Review of Impacts and Adaptations" (2003), online(pdf): *The World Bank Environment Department* <documents.worldbank.org/curated/en/757601468332407727/pdf/787390WP0Clima0ure0377348B00PUBLIC0.pdf > at 7, accessed 11 May 2020.
[178] See Tariq Khokhar, "Chart: Globally , 70% of Freshwater is Used for Agriculture" (22 March 2017), online: World Bank Blogs <blogs.worldbank.org/opendata/chart-globally-70-freshwater-used-agriculture>.
[179] See Food and Agriculture Organisation, "Water for Sustainable Food and Agriculture, A Report of the G20 Presidency of Germany" (2017), online (pdf): *FAO*< www.fao.org/3/a-i7959e.pdf> at 2, accessed 11 May 2020.

about 3,000 litres to produce the daily food needs of a person.[180] The functions of water in agriculture include irrigation of crops, fertilizer and pesticide application, cleaning and sanitation, processing operations like heating and refrigeration, livestock hydration, and general hygiene of the animals and equipment.[181] All these critical activities in food production are affected as climate change effects endanger the availability and quality of water. Water resources for food production and related agricultural activities will be affected by changing rates of precipitation and evaporation, groundwater levels, and dissolved oxygen content.[182] This effect becomes evident as droughts occur, and plants and animals begin to lack the necessary water resources for their growth and development, thereby, leading to crop death or low yield. On the other hand, excessive rainfall leading to floods harm crops by causing them to drown. Excessive rainfall can also encourage the growth of bacteria, fungus, and mould, and also cause the spread of pathogens, pests and other diseases to plants. Consequently, inadequate and excessive rainfall events perpetuated by climate change invariably produces unfavourable effects on food production and security, as a whole.

The observed effects of climate trends over the years are evident in crop production processes in several regions of the world. One such climate change impact is the El Niño Southern Oscillation (ENSO), which causes heavy rainfalls, floods, or extremely hot or cold weather.[183] This weather occurrence can lead to an outbreak of animal diseases and plant pests.[184] It has also been attributed to increased or decreased precipitation in different parts of the world. Severe dry weather caused by El Niño led to significant crop losses in Central America[185] and Southern Africa,[186] with a decline of up to 60 percent and 80 percent of maize and beans respectively, in

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[180] See Food and Agriculture Organisation, "Water", online: <www.fao.org/water/en/> accessed 12 May 2020.
[181] See Eufic, "Uses of Water n Food Production and Processing" (1 February 2015), online: *Eufic* <www.eufic.org/en/food-production/article/use-of-water-in-food-production#:~:text=The%20biggest%20use%20of%20water,is%20used%20for%20irrigation%20purposes.&text=The%20reuse%20of%20water%20through,provide%20security%20of%20water%20supplies.>. See also FAO, "Water Needed for Food Production", online: <www.fao.org/resources/infographics/infographics-details/en/c/218940/> accessed 11 May 2020.
[182] Supra note 166 at 450.
[183] See Food and Agriculture Organisation, "El Niño", online: *FAO* <www.fao.org/el-nino/en/> accessed 12 May 2020.
[184] *Ibid.*
[185] See Food and Agriculture Organisation, "Major Crop Losses in Central America Due to El Niño" (1 September 2015), online: *FAO* <www.fao.org/emergencies/fao-in-action/stories/stories-detail/en/c/330253/>.
[186] See Food and Agriculture Organisation, "El Niño Lowers Early Production in Southern Africa", online: *FAO* <www.fao.org/news/story/en/item/369894/icode/> accessed 12 June 2020.

Central America.[187] Countries in East Africa are reported to be one of the most hard-hit regions by this extreme weather condition. In Ethiopia, for example, it caused severe drought and flooding, resulting in acute and widespread crop failure, and jeopardising food production in the country.[188]

Another impact of climate change on crop production is found in the proliferation of weeds and pests among crops. According to the FAO, about 10-16 percent – estimated to be at least USD220 billion – of global harvest is lost to plant pests each year.[189] With climate variability and extreme weather events comes a spread of unwanted species or plants that jeopardise agricultural productivity in certain regions. For instance, the swarms of desert locusts plaguing East African nations and exacerbating food security in the countries are also attributed to climate change. Studies have linked a hotter climate and wet weather to more damaging locust swarms. This locust infestation has been ascribed to the abnormal rainfalls of up to 400 percent above average experienced in East Africa from October to December 2019, an occurrence accentuated by climate change.[190] Even more, the FAO stated that widespread rains in late March of 2020 were expected to cause a staggering increase in locust numbers in East Africa, eastern Yemen, and southern Iran.[191] These events are extending to western India from Pakistan and Iran,[192] and are projected to migrate to Sudan, Chad, and continue westwards towards the Sahel of West Africa.[193]

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[187] *Supra* note 171 at 450.
[188] See Sara Gustafson, "El Niño to Have Long-term Development Impacts, Report Says" (10 April 2016), online: *Africa South of the Sahara Food Security Portal* <ssa.foodsecurityportal.org/content/el-niño-have-long-term-development-impacts-report-says>. See also Food and Agriculture Organisation, "Ethiopia has Staved off Worst of El Niño, But Possible Effects of El Niña Looming Large" (12 August 2016), online: <www.fao.org/news/story/en/item/429198/icode/>.
[189] *Ibid.*
[190] See United Nations Environment Programme, "Locust Swarms and Climate Change" (6 February 2020), online: <www.unenvironment.org/news-and-stories/story/locust-swarms-and-climate-change>. See generally Glibert Nakweya, "Changing Climate Creates Ideal Conditions or Devastating ocust Swarms" (4 June 2020), online: *Mongabay News & Inspiration from Nature's Frontline* <news.mongabay.com/2020/06/changing-climate-creates-ideal-conditions-for-devastating-locust-swarms/>
[191] See Food and Agriculture Organisation, "Desert Locust Situation Update" (3 July 2020), online: *FAO* <www.fao.org/ag/locusts/en/info/info/index.html>.
[192] Daisy Dune, "Q&A: re the 2019-20 Locust Swarms Linked to Climate Change? (10 March 2020), online: *Carbon Brief* <www.carbonbrief.org/qa-are-the-2019-20-locust-swarms-linked-to-climate-change>.
[193] *Supra* note 137.

Locusts swarms cause major damage to agriculture, as the ravaging pests eat plant material and, if not eliminated, threaten to destroy crops. A small swarm of locusts is even reported to consume enough food for 35,000 people in a single day.[194] For larger swarms, which typically occupy 100 square kilometres, containing between 4 billion and 8 billion locusts, they are said to consume the equivalent of the amount of food at least 3.5 million people will eat in a day.[195] In Kenya, they were reported to occupy an area of 2,400 square kilometres. It becomes more difficult to destroy these pests when they are in tremendously large numbers as experienced in East Africa, because of the complications accompanied with their widespread, like the environmental and health considerations regarding the choice of chemicals to use, and the huge amount of resources required to acquire and apply the necessary pesticides. In consequence, locust infestation, caused by climate change effects, already endangers food security in the regions experiencing them.

The animal husbandry sub-sector of agriculture is also adversely impacted by climate change effects. Livestock, poultry, and fish significantly contribute to global food security, especially in communities which rely notably on the unique sources of energy, protein and micronutrients contained in livestock. Agricultural productivity is similarly affected through the adverse effects that climate change produces on the quantity and quality of food outputs derived from farm animals. As Rojas-Downing et al note, climate change will affect livestock production through competition for depleted natural resources, spread of livestock diseases, heat stress, biodiversity, and quantity and quality of feeds.[196] Easterling affirms that farm animals can experience climate change effects directly by altered physiology and, indirectly, by changes in feed supplies.[197] A combination of increases in temperature, CO2 and precipitation variation affect the quantity and quality of animal feed.[198] Even though the impact on feed affect the healthy growth of the

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[194] See Carly Cassella, "The Worst Locust Plague n Decades Could Destroy Crops in Africa on a Massive Scale" (31 January 2020), online: *Science Alert* <www.sciencealert.com/africa-is-having-its-worst-locust-swarm-in-decades-and-the-destructive-potential-is-unprecedented#:~:text=If%20a%20swarm%20of%20locusts,seriously%20bent%20out%20of%20shape.&text=These%20voracious%20pests%20threaten%20to,people%20in%20a%20single%20day.>.
[195] See Antoaneta Roussi, "Why Gigantic Locust Swarms are Challenging Governments and Researchers" (12 March 2020), online: *Nature* <www.nature.com/articles/d41586-020-00725-x>.
[196] See Melissa Rojas-Downing et al, "Climate Change and Livestock: Impacts, Adaptation and Mitigation" (2017) 16 Climate Risk Management 145-163 at 146.
[197] *Supra* note 171 at 279.
[198] *Supra* note 196 at 147.

animals, it also impacts negatively on the quantity and nutritional content of the food produced from such animals. As rainfall variability produces water shortages for animal consumption and hygiene, it can also increase pathogens, parasites and vectors, and facilitate the emergence and spread of diseases among animals.[199] An example of such diseases is the African swine fever, which wiped out over one-quarter of the world's pig (pork) population in 2019, causing food prices in China to increase by 15% - 22%.[200] Furthermore, increase in temperature and precipitation variation alter heat exchanges between animals and their environment, such that mortality, growth, yields, reproduction, and milk production will be affected,[201] thereby reducing the amount of animal food products available for consumption.

### 3.1.2 Impacts of Climate Change on Food Accessibility

While much discussion and scientific evidence on the impact of climate change and food security is framed around food availability or production, aspirations towards strengthening the resilience of food production value chain alone do not guarantee food security. Other dimensions of food security are equally impacted by climate change. The impacts of climate change on food security transcend the effects on food production, they are also visible in individuals and households' ability to acquire sufficient healthy and nutritious food. For Ziervogel and Ericksen, food accessibility refers to the affordability, allocation mechanisms, and preferences that enable people to effectively translate their hunger into demand that is satisfied.[202] As affirmed by the FAO, food access is ensured when households and all individuals within them have sufficient resources to obtain adequate food for a nutritional diet.[203] This dimension of food security is not achieved only when food is available and physically accessible by individuals. It also depends upon the individual household income and the distribution of such income among different needs

[199] See Food and Agriculture Organisation, "Livestock and Climate Change" online: <www.fao.org/3/a-i6345e.pdf> accessed 15 June 2020.
[200] See Carmen Reinhart & Rob Subbaraman, "How Can We Prevent a COVID-19 Food Crisis?" (16 May 2020), online: *World Economic Conference* <www.weforum.org/agenda/2020/05/preventing-a-covid-19-food-crisis/>.
[201] *Ibid.*
[202] See Giana Ziervogel and Polly Ericksen, "Adapting to Climate Change to Sustain Food Security" (2010) WIREs Climate Change 2010 525-540 at 426. *(PDF) Adapting to climate change to sustain food security*.
[203] See Food and Agriculture Organsiation, "Food Security", online: <www.fao.org/3/Y5061E/y5061e08.htm> accessed 11 May 2020.

within the household.[204] It is a measure of the ability to secure entitlements, such as legal, political, economic, and social resources that an individual requires to obtain access to food.[205]

For the population that does not engage in subsistence farming, access to food is a function of incomes and prices, i.e., how much money one has to spend on other basic needs vis-à-vis the cost of food.[206] Therefore, food access can deteriorate when non-farm incomes fall, when food prices rise, or when the productivity of farm households suffers. The effects of climate change have increased concerns about achieving food security, especially for the poor and vulnerable who are most disadvantaged in their purchasing power and the social dynamics governing access to food. The mere presence of an adequate food supply does not guarantee that a person can obtain and consume food. Despite the production of sufficient amounts of food, most hungry people are unable to access available food.

Several indicators of food accessibility are affected by climate change. As production implications arise for all agricultural outputs, like food, feed, fuels, and fibres, food trade flows are also affected, with implications for farm incomes and food access.[207] The United States Environmental Protection Agency notes that increases in the severity and frequency of extreme weather events caused by climate change can result in spikes in food prices, and interrupt food transport and delivery.[208] In addition, resulting spikes in food prices after extreme events, exacerbate existing economic hardships that prevent people from accessing adequate food. Because access to food entails the ability to obtain food, including the ability to purchase food at affordable prices,[209] the problem of food accessibility manifests in two ways: through the creation of barriers that inhibit people's physical access to food and people's financial inability to purchase adequate food. Physical access to food can be affected through climate-related

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[204] *Ibid.*
[205] *Ibid* at 710.
[206] See David Lobell and Marshall Burke,"Climate Change Effects on Food Security: An Overview" (2010) 37 Advances in Global Change Research at 21.
[207] See Aziz Elbhri, ed., "Climate Change and Food Systems Global Assessments and Implications for Food Security and Trade" (2015), online(pdf): *Food and Agriculture Organisation* <pure.iiasa.ac.at/id/eprint/11589/1/a-i4332e.pdf> 325, accessed 20 July 2020.
[208] See United States Environmental Protection Agency, "Climate Change Impacts on Agriculture and Food Supply", online: <archive.epa.gov/epa/climate-impacts/climate-impacts-agriculture-and-food-supply.html> accessed 09 June 2020.
[209] *Supra* note 203.

disturbance to food storage, as increasing temperatures affect food preservation, and contribute to spoilage and contamination.[210] Likewise, the increased likelihood of extreme weather events, such as drought and floods will not only directly impact agricultural production but also destroy physical infrastructure affecting food storage and distribution.[211] For instance, transportation of produce from farms to markets and individuals is susceptible to weather disasters like floods and storms that may affect means of transportation. Extreme weather events can further degrade road networks, higher sea level rise may require costly changes to seaports, and rising seawater may damage railway and other transportation infrastructure.[212] Such negative impacts on transportation systems are likely to have negative impacts on food accessibility.

Another way through which access to food is endangered is the resulting effects of extreme weather events on food prices and its adverse consequence on individuals' purchasing power, especially the poor. As reported by the IPCC, studies have found that decreased agricultural productivity will depress agricultural supply and increase food prices.[213] When food productivity declines without a parallel reduction in food demand, food prices become higher as more people scramble for limited resources. Changes in agricultural production, related to the quantity and quality of outputs and cost of production, play pivotal roles in determining the market value of food and its affordability. Food affordability is the ability of individuals, households, or communities to afford the price of food or land for producing food, relative to their income.[214] The interactions of climate change on food systems[215] can create variables that influence food price volatility in domestic and global markets. Such variables, which reduce yields and lower overall food production, ultimately affect food prices due to the scarcity it creates. A decline in food production or availability invariably aggravates price fluctuations of food available in the

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[210] *Ibid.*
[211] *Supra* note 207 at 711.
[212] See Huma Haider, "Climate Change in Nigeria: Impacts and Responses" (10 October 2019), online(pdf): *K4D* <assets.publishing.service.gov.uk/media/5dcd7a1aed915d0719bf4542/675_Climate_Change_in_Nigeria.pdf>.
[213] Supra note 166 at 460.
[214] See Food Climate Research Network, "What is Food Security" (12 March 2018), online: <www.foodsource.org.uk/building-blocks/what-food-security>.
[215] "Food systems encompass the entire range of actors and their interlinked value-adding activities involved in the production, aggregation, processing, distribution, consumption and disposal of food products that originate from agriculture, forestry or fisheries, and parts of the broader economic, societal and natural environments in which they are embedded." See Food and Agricultural Organisation, "Sustainable Food Systems, Concept and Framework" (2018), online (pdf): <www.fao.org/3/ca2079en/CA2079EN.pdf> accessed 13 May 2020.

market. In such instances, access to food will be determined by the ability of consumers to pay higher prices for food.[216] This effect is especially felt in urban areas, where the urban poor lack the financial capacity to purchase adequate food.

The economic effects of climate change on food security are also significantly felt in rural areas, amongst communities that rely on agriculture as a means of livelihood. Subsistence agriculture is practised on a relatively wide scale in various countries of the world, including large parts of sub-Saharan Africa.[217] The vast majority of the world's most food insecure live in rural areas of the poorest countries. Consequently, their livelihoods are almost entirely dependent upon agriculture, as smallholder farmers, landless wage workers, or pastoralists.[218] These groups of people are particularly susceptible to the economic effects of climate change.[219] Where climate change affects productivity, and fuels insecurity by placing pressure on limited resources like grazing land and water, the livelihood of such individuals are put at stake. Climate change can also pose threats to the security situation in countries through conflicts over depleting resources. Nigeria, for example, experiences this effect, as desert encroachment and diminishing grazing resources in the Northern region of the country has prompted massive emigration and resettlement of people to areas less threatened by desertification.[220] With over 2,000 people killed, the migration has exacerbated competition, pressure, and clashes among herdsmen and farmers over farmlands, leading to loss of lives, resources, and disrupting the livelihoods of farmers and farming households.[221] In a study conducted among farmers affected by the farmer-herdsmen conflict in Benue State, Nigeria, Victor Ijirshar et al acknowledged the negative effects of these clashes on farmers' output, apparent in the reduction of crop yields and income, loss of lives, properties and products in storage, and the displacement of farmers.[222] Eventually, such

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[216] *Supra* note 207 at 712.
[217] See Africa Development Promise, "What is Subsistence Farming" (6 October 2014), online: <www.britannica.com/topic/subsistence-farming>.
[218] Supra note 207 at 713.
[219] *Ibid.*
[220] *Ibid* at 4.
[221] *Ibid.* See also ACAPS, "Nigeria: Farmer-Fulani Herder Violence in Benue, Kaduna and Plateau States- Thematic Report" (21 March 2017), online: <www.acaps.org/sites/acaps/files/products/files/20170320_acaps_thematic_report_nigeria_farmers-herders_violence.pdf>.
[222] See Victor Ijirshar, Godwin Ker & Yange Terlumun, "Socio-Economic Effects of Farmers-Fulani Herdsmen Conflict on Farmers Output in Benue, Nigeria" in F. Bakpo and F. Ugbeda, eds., Proceeding of An International

economic losses put a strain on individuals' financial capabilities and their ability to afford adequate nutritious food.

### 3.1.3 Impacts of Climate Change on Food Utilisation

Food utilisation is closely linked to the overall state of food quality and individuals' ability to absorb and effectively use the nutrients ingested for normal body functions. It is commonly understood as the way the body makes the most of various nutrients in the food and involves the quality, nutrient composition, and preparation of food.[223] As individuals access food for consumption, not only is the quantity (i.e., enough food and energy) of food important, such food should provide all essential nutrients (i.e., quality of food), be free from contaminants and not pose any health risks to consumers (i.e., food safety). Proper food utilisation requires that a diet contains essential nutrients, provides sufficient energy, water, and maintains adequate sanitation.[224] Food utilization pertains to the nutrition component of the food consumed, and deals with the ability of the human body to utilise the nutrients contained in food. The FAO describes this dimension of food security as "the way in which the body makes the most of various nutrients in the food".[225] It further identifies effective food utilisation as dependent on knowledge within the household of food storage and processing techniques and basic principles of nutrition.[226] Here, I emphasise the narrow view of the nutritional value of available and accessible food, and how climate change adversely disrupts the nutritional component of food.

Aberman and Tirado summarise the different aspects through which climate change affects food utilisation in two ways: diet and health.[227] While diet pathways impact the nutrient content of the food people grow and eat, health pathways entail food and water safety, diseases, and infections

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Academic Conference of the International Multidisciplinary Research and Academic Society (Obudu, Cross River State, 2015) at 5-11.

[223] See Food and Agriculture Organisation, "Food Security Information or Action: Practical Guides, An Introduction to the Basic Concepts of Food Security", online(pdf): <www.fao.org/3/a-al936e.pdf> accessed 13 May 2020.

[224] *Supra* note 175.

[225] See Noora Lisa-Aberman and Cristina Tirado, "Impacts of Climate Change on Food Utilization" in Freedman B., ed., *Global Environmental Change, Handbook of Global Environmental Pollution* (Springer, Dordrecht, 2014) 717-724 at 718.

[226] *Supra* note 175.

[227] *Supra* note 171 at 719.

that impact the body's ability to absorb required nutrients from consumed food.[228] The IPCC describes the diet impact as direct effects on the biological processes of plants and animals. They observe that climate variability affects metabolic rates in plants and animals, which has consequences on their growth, reproduction, and eventual assimilation of nutrients. For DaMatta et al, this effect may decrease protein and mineral nutrient concentration in agricultural produce. Rising carbon dioxide concentrations may also reduce water loss in plants through transpiration. This factor, and the changes in temperature, affect metabolism, plant growth rates, yields, and the nutritional quality of plants.[229] The IPCC illustrates this impact in reporting that increased concentrations of atmospheric carbon dioxide, which drives climate change, lower the content of zinc, protein and iron nutrients in important food crops.[230]

According to the FAO, any impact of climate change on the health environment also impacts food utilization, and climate change will have an impact on water resources and the availability of clean drinking water.[231] The World Health Organisation (WHO) has stated that rainfall can influence the transport and dissemination of infectious agents, while temperature affects the growth and survival of such agents.[232] For example, extreme weather events, such as flooding in environments with poor sanitation, will affect freshwater hygiene in such communities, which can, in turn, contaminate crops. It can also result in exposure of livestock and people to water-borne diseases, thus lowering their capacity to utilise food effectively.[233] Aberman and Tirado note that the health and diet dimensions of food interact as undernutrition increases susceptibility to disease, which may decrease productivity and lead to more food insecurity and undernutrition.[234] The impact of climate change on food prices also negatively affects the amount of nutrition consumed by people, especially the poor. Poverty is more typically associated with undernutrition and malnutrition, more generally, as the poor lack the resources to access food that provides adequate amounts of nutrition required for the body. This lack of access to

[228] *Ibid.*
[229] Supra note 169 at 463.
[230] Supra note 169 at 463-464.
[231] Supra note 203.
[232] See World Health Organisation, "Climate Change and Human Health", online: <www.who.int/globalchange/summary/en/index5.html> accessed 15 July 2020.
[233] *Supra* note 60. See generally Karen Levy, Shanon Smith and Elizabeth Carlton, "Climate Change Impacts on Water Borne Diseases: Moving Toward Designing Interventions (2018) 5:2 *Curr Environ Health Rep*. 272-282.
[234] *Supra* note 171.

nutritional food usually translates to impaired growth, obesity, overweight, and other related diseases.[235] In the instance of food price hikes, vulnerable people are more affected, especially in urban areas, where livelihood impacts are particularly severe for individuals and groups that have scarce resources or are socially isolated.[236]

Decreased yields can impact nutrient intake of the poor by decreasing supplies of highly nutritious crops and by promoting adaptive behaviours that may substitute crops that are resilient but less nutritious.[237] Climate change can also affect human health in other ways that interact with food nutrition. One such instance is reflected in many parts of the world where agriculture systems rely on manual labour. It is projected that heat stress due to climate change will reduce the number of hours people can work and increase their health risks,[238] consequently, people will experience economic hardships – which translates to reduced access to adequate food – on account of their inability to work at maximal capacity.

Other impacts of climate change on food nutrition may include weather conditions that cause food contamination by exposure to toxins in the food chain and encourage pests' infestation, which attack crops and depletes their nutritional contents. Changes in temperature and rainfall due to climate change may influence fungi growth and increase mycotoxins in agricultural food products, which are high risks to human health.[239] There is also widespread agreement that climate change and variability will alter water quantity and quality by affecting freshwater sources and the availability of clean drinking water.[240]

Another perspective to the utilisation dimension of food security is the pertinent role that education plays in ensuring that people have the requisite knowledge to eat properly and prevent malnourishment. Extreme weather events such as storms may destroy or damage school buildings, hinder commutes to school, and also necessitate the use of school buildings to shelter

[235] *Supra* note 169 at 446.
[236] *Supra* note 169 at 446-447.
[237] *Supra* note 169 at 463.
[238] *Ibid.*
[239] See Toqeer Ahmed et al, "Water-Related Impacts of Climate Change on Agriculture and Subsequently on Public Health: A Review for Generalists with Particular Reference to Pakistan" (2-16) 13:11 *Int J Environ Res Public Health,* 1051 at 5.
[240] *Ibid.*

people who have been displaced from their homes due to such events.[241] This affects children's education and access to school feeding program, which will foster undernutrition and susceptibility to diseases in children from poor households. Thereby, jeopardizing future generation's ability to work and earn adequately for sustained livelihood and food security. In addition to the effects of climate change events on the livelihoods of poor communities which translates to their inability to access adequate food, the impact on access to education will affect the transfer of knowledge that helps in fostering good nutritional habits. What results from this knowledge gap is that children and, indeed, many families especially in developing countries are ill-informed and not aware of the importance of a balanced diet with the required nutrients that the body needs to grow, develop, and function efficiently.

### 3.1.4 Impacts of Climate Change on Food Stability

The objective of ensuring food security aims to preserve and fulfil all individuals' basic nutritional needs today, tomorrow, and the years ahead. It refers to the temporal availability, accessibility, adequacy, and utilization of food for both present and future generations. Stability affects and interacts with all food security dimensions discussed above. The conceptualization of food stability brings together all dimensions of food security in light of current human needs and future requirements. Leroy et al describe food stability as "a cross-cutting dimension that refers to food being available and accessible, and utilization being adequate at all times, so that people do not have to worry about the risk of being food insecure during certain seasons or due to external events."[242] In this respect, even if an individual's food intake is adequate today, such a person is still considered to be food insecure if the individual has inadequate access to food periodically. Climate change effects may contribute to factors that necessitate food instability by creating uncertainties and risks in the food chain.

[241] See Heather Randell, "Climate Change May Weaken Children's Education in the Tropics" (7 May 2019), online: New Security Beat (Blog), <www.newsecuritybeat.org/2019/05/climate-change-weaken-childrens-education-tropics/>.
[242] See Jef Leroy et al, "Measuring the Food Access Dimension of Food Security: A Critical Review and Mapping of Indicators" (2015) 36:2 Food and Nutrition Bulletin 167-195 at 169.

Climate risks and variability disrupt food stability. Many crops have annual cycles and seasons; their yields fluctuate in varying climates, particularly concerning the intensity or paucity of rainfall and temperature. Maintaining the continuity of food supply when production is seasonal is therefore challenging.[243] It is even more critical when seasons are rapidly changing, and climate predictions are uncertain. Take droughts and floods for instance, both phenomena are expected to become more frequent, more intense and less predictable as a consequence of climate change.[244] Changes in the amount and timing of rainfall within the season and an increase in weather variability are likely to aggravate the precariousness of local food systems, especially in rural areas that depend on rainfed agriculture for an important part of their local food supply.[245] Furthermore, the FAO affirms that weather variability is also likely to increase the frequency and magnitude of food emergencies for which neither the global food system nor affected local food systems are adequately prepared.[246] These impacts may produce negative consequences on the stability of food availability, accessibility, and utilisation. As complexities arise in the food chain and seasons become irregular, global food markets may exhibit higher price volatility, jeopardizing the stability of returns to farmers and the access to purchased food of both farming and non-farming poor people.[247] Food storage is also affected, as higher temperatures and humidity attributable to climate change may require increased expenditure to preserve stored grains, which will increase food prices and limit countries' ability to maintain reserves of sufficient size to respond adequately to food emergencies.[248] All these factors influenced by climate change affect stable food production and preservation, thereby, increasing food insecurity.

### 3.2 The Coronavirus Pandemic and Global Food Security

The global community faces unprecedented challenges as the COVID-19 pandemic impacts several aspects of human society. On 11 March 2020, the World Health Organisation (WHO) declared COVID-19 a pandemic after over 118,000 cases of the illness occurred in over 100

[243] *Supra* note 167.
[244] *Ibid.*
[245] *Ibid.*
[246] *Supra* note 163 at 12.
[247] *Ibid.*
[248] *Ibid.*

countries worldwide.[249] The COVID-19 pandemic has had, and continues to have, profound effects on people's health and the global economy, and is jeopardising the livelihoods and food security of millions of people across the world. While research on the virus and developing medical solutions to the disease is ongoing, many countries have adopted far-reaching measures to prevent and control the spread of the virus. In many countries, these measures have led to a complete or limited lockdown of all activities requiring commute, leading to the closure of offices, stores, and other workplaces.

Although activities have begun to pick up, with some offices and businesses reopening, the lockdown has left an indelible mark on the livelihoods of millions of people, and countries are still adapting to the new normal. Restrictions on national and international air and land travel, stay-at-home orders, bans, and curfews have led to complete or partial closures of businesses, as well as the disruption of transportation and other logistics in the agricultural value chain systems. Due to this, a significant number of people in many countries have lost jobs and means of livelihood. For the people in developing countries, they are in an even more precarious situation because of the absence of adequate social safety nets provided by the governments. This, amongst many other factors, affects the livelihoods of many communities, thereby affecting their access to food and putting them at risk of hunger and malnutrition. The restriction of inter and intra country movements, coupled with other economic implications, is already having negative impacts on global food security.

Though a health crisis, the COVID-19 pandemic threatens the food security of millions of people who are already suffering from hunger and malnutrition. The crisis has magnified existing vulnerabilities in countries across the world, particularly developing countries. Even before the virus hit, countries were already tackling hunger and food insecurity. This health crisis has now compounded existing problems and revealed silent structural inequities. The global community faces an impending food crisis in light of the direct and indirect effects of the coronavirus pandemic on food systems. In the long term, the combined effects of COVID-19 on the health of individuals, as well as the effects of corresponding mitigation actions will further disrupt food

[249] See World Health Organisation, "WHO Characterises COVID as a Pandemic" (11 March 2020), online: *WHO* <www.who.int/emergencies/diseases/novel-coronavirus-2019/events-as-they-happen>.

systems and exacerbate existing food insecurity challenges, by impacting not only food trade, food supply chains and markets but also people's lives, livelihoods, and nutrition. Although food supply and access remain relatively stable in some countries, many developing countries are already feeling the impacts of COVID-19 mitigation measures on the food system. The resulting changes to working patterns and living circumstances have had an enormous impact on the supply, purchase, preparation, and consumption of food. In the following sections, I identify some existing and projected impacts of the COVID-19 pandemic on food security.

### 3.2.1 Impacts of the Coronavirus Pandemic on Food Security

The global pandemic creates a host of challenges for food production, demand, and supply, which can adversely affect food availability and accessibility in some countries. Although the COVID-19 pandemic has no direct impacts on food production in terms of the natural resources needed for crop and animal husbandry, a wide range of indirect effects impact the food system. The health crisis has caused unprecedented burdens and bottlenecks on food supply chains, affecting farm labour, processing, transport, and other logistics pertaining to the food system, as well as significant shifts in food demand. In addition to the health risks that the farming population faces, most of the disruptions encountered in the food system result from policies adopted to contain the spread of the virus.

The COVID-19 pandemic poses risks to the availability and productivity of sufficient workforce required in the agriculture value chain. Farm labour is affected as majority of migrants who engage in seasonal labour encounter migratory restrictions, and the health of farmers is endangered. In countries that depend on seasonal labour for some farm sectors like fruits and vegetables, which are more labour-intensive, COVID-19 mitigation measures that involve lockdowns and limit the mobility of people across borders have reduced the availability of seasonal workers for planting and harvesting in some countries.[250] The pandemic can also reduce farm labour by affecting the health of farmers and farm households.

[250] See Food and Agriculture Organisation, "Migrant Workers and the COVID-19 Pandemic" (7 April 2020), online (pdf): <www.fao.org/3/ca8559en/CA8559EN.pdf>.

As the entire world population – cutting across all ages – is at risk of contracting the virus, farmers are no exception. However, the consequence of farmers contracting the virus poses grave risks to food security. Generally, the majority of farmers are comprised of a relatively older population, and as data showing that COVID-19 has a much higher level of severity in older people, the health crisis poses significant risks to the world's farming population.[251] As a result of this, many farmers are at risk of severe health problems if they contract the virus, thereby, reducing farm labour and decreasing food production. In May 2020, an outbreak of COVID-19 was reported to have occurred on a farm operation in Ontario, with up to 85 migrant farm workers having tested positive for the virus.[252] By June 2020, the number had risen to 200 farmers, and, at least, 17 farms in Ontario were infected with the coronavirus.[253] If the virus significantly hits the population skilled in food production and the number of people infected continues to rise, it will have adverse effects on the quantity of food produced and affect food security. This impact further compounds other issues threatening food security and nutrition in the context of the global pandemic. As the FAO notes, greater threats to food security and nutrition are more likely to arise via other means, such as the collapse in global demand for internationally produced agri-food products, growing disruptions to local food markets and increasing food access issues due to loss of critical income sources.[254]

The lockdown measures initiated to prevent and control the spread of the virus pose the greatest risks to the food system. The outbreak of the COVID-19 pandemic and the control and mitigation measures enforced by governments worldwide, combined with the massive economic impacts of these necessary measures, can disrupt the movement of food from farm to table. In the past, the adoption of restrictive measures during the 2014 Ebola virus outbreak was reported to

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[251] See generally Successful Farming, "Six Possible Impacts of COVID-19 on Farming" (16 March 2020), online: <www.agriculture.com/news/business/six-possible-impacts-of-covid-19-on-farming>. The world's farmers are mostly made up of people more advanced in age, with an average age of 50. This number varies in different countries and regions of the world. See Aslihan Arslan, "How old is the average farmer in today's developing world?" (1 July 2019) <www.ifad.org/en/web/latest/blog/asset/41207683>.
See also Gro Intelligence, "The Coming Geographic Challenges in Agriculture" (8 September 2016), online: <gro-intelligence.com/insights/articles/agriculture-demographics-challenges>.
[252] CBC News, "85 migrant workers test positive in latest Ontario farm outbreak" (31 May 2020), online: *CBC* <www.cbc.ca/news/canada/london/85-migrant-workers-norfolk-county-coronavirus-1.5592482>.
[253] See Allison Martell and Kelsey Johnson, "Ontario testing migrant farm workers after coronavirus deaths, severe cases" (9 June 2020), online: *National Post* <nationalpost.com/pmn/health-pmn/ontario-testing-migrant-farm-workers-after-coronavirus-deaths-severe-cases>.
[254] *Supra* note 6 at 6.

disrupt the collection and transport of agricultural products to markets.[255] According to the FAO, high-value commodities, like fruits and vegetables, meat, fish, and dairy, while readily available for now, tend to be more vulnerable to logistical problems because their production process is labour intensive, and the products are highly perishable.[256] The movement restrictions in place may pose delays to the transportation of these products and lead to food wastage. When these perishable food items fail to reach wholesale and retail markets, farmers, and traders suffer major income losses.[257] This leaves the farmers with fewer resources to prepare for the next season's planting, fishing, and livestock faming.[258] In addition, significant amounts of food that reach retailers and consumers are wasted because of the reduced demand for these products by restaurants due to their closure or reduced operation and hoarding by consumers who fear losing access to retail stores.[259]

As governments began to enforce lockdown measures within their States, food hoarding and panic buying proliferated the system. These actions put an incredible strain on the food system. In some countries, food hoarding and panic buying led to price hikes and heightened economic barriers to food for the vulnerable population.[260] It also led to food supply shortages and wastage; people purchased more food than required, a substantial amount of which end up in the garbage over time as they became stale or spoilt. This also affected food availability at food banks, which would usually receive food donations from grocery stores. Due to food shortages in grocery stores resulting from panic buying, there was not enough food left for the stores to donate to food banks, as they usually would.[261] Meanwhile, as food banks began to have less food for donation, there was increased pressure on demand for food from the banks because of the economic losses experienced by individuals and families during the pandemic.[262] This situation exacerbated food

[255] See e.g., Arlène Alpha and Muriel Figuié, *Impact of the ebola virus disease outbreak on market chains and trade of agricultural products in West Africa* (Food and Agriculture Organisation: Dakar, 2016).
[256] *Supra* note 6.
[257] *Supra* note 6 at 7.
[258] *Ibid.*
[259] *Ibid.*
[260] See Jill Hobbs, "Food Supply Chains during the COVID-19 Pandemic" (2020) 68 Canad J Agr Econ 171-176 at 172-173.
[261] See Beena Raghavendran and Ryan McCarthy, "How Panic Buying has Put an Incredible Strain on Food Banks even as the Need for them Explodes" (13 April 2020), online: *ProPublica* <www.propublica.org/article/how-panic-buying-has-put-an-incredible-strain-on-food-banks-even-as-the-need-for-them-explodes>.
[262] *Ibid*.

and nutrition challenges already faced by the poor who, in addition to being unable to purchase adequate food, heavily rely on food banks.

The people who are most vulnerable to food insecurity in the context of the COVID-19 pandemic are those who were already experiencing critical food and dietary deprivations before the onset of the health crisis. Many live in communities already suffering from extreme weather events caused by climate change and other natural disasters; a lot more are less privileged with inadequate resources to meet basic needs. Even strategies adopted by governments to ameliorate food insecurity and malnutrition challenges that children and families face have been critically affected by the pandemic. One such example is the school feeding programme aimed at providing educational and health benefits to school children by providing meals that improve food security at the household level and increase enrollment rates in schools. The closure of schools around the world due to the COVID-19 pandemic poses great risks to the health and nutrition of millions of children across the world. Many children from low-income families whose nutrition depends on the daily meals they receive at school are now deprived of their access to food. The World Food Program (WFP) noted in the wake of the pandemic that 37 countries where the organization implements school feeding programmes had enforced partial or country-wide closure of schools, resulting in nearly 9 million children no longer receiving WFP-supported school meals.[263] In a more recent report, the WFP records 161 countries with school closures and 346 million children missing out on meals globally.[264] With hunger palliative measures being affected by COVID-19 mitigation methods, a lot of progress made in tackling food insecurity over the years threatens to be eroded.

The loss of livelihoods resulting from job losses and declined revenues has impacted the financial capacity of individuals and families to access adequate food. According to the International Labour Organisation (ILO), the livelihoods of about 1 billion people have been put

[263] See World Food Programme, "World Food Programme gears up to support children left without meals due to COVID-19 school closures" (20 March 2020), online: <www.wfp.org/news/world-food-programme-gears-support-children-left-without-meals-due-covid-19-school-closures>.
[264] See World Food Programme, "Global Monitoring of School Meals During COVID-19 School Closures", online: <cdn.wfp.org/2020/school-feeding-map/?_ga=2.135340401.1707472182.1595122356-1396985114.1595122356> accessed 12 July 2020.

at risk as a result of the global pandemic.[265] The loss of livelihoods affects vulnerable households' capacity to access the food they need.[266] Job losses and reductions in income may reduce global demand for some food items and the overall nutritional quality of food consumed. Markets for other high value agricultural products are also sensitive to demand drops brought about by economic downturn. As people's incomes and savings decline during an economic crisis, high value, and highly nutritious foods, such as fruits, vegetables, and protein-rich products, are often replaced with lower value foods, such as those derived from staple cereals.[267] Consequently, people consume more food with less nutritional value, therefore, increasing malnutrition and disrupting the demand and supply flow of agricultural produce.

When climate change effects occur alongside major global economic downturns, the risk to food availability and accessibility are amplified, and low income and net food importing countries face the greatest risks. These risks are likely to be even more pronounced in the context of the COVID-19 induced economic crisis, due to unique challenges posed by social distancing requirements and restrictions on people's movement. For example, food quality may be affected by movement restrictions through barriers experienced during the movement of agricultural inputs, which are necessary to improve crop and animal growth and the nutritional value of the products derived from them. Such products include fertilisers, pesticides, animal feed, and staple ingredients.[268] Furthermore, face-to-face extension services, used in many countries to provide farmers with seasonal weather forecast information and guidance on appropriate seed varieties and crop mixes, have been affected.[269] In the face of climate risks, COVID-19 mitigation measures compound food insecurity issues and complicate climate change adaptation measures. The severed communication due to movement barriers may reduce some farmers' capacity to anticipate impending weather shocks, leaving them more vulnerable to climate variability than before.[270] Considering that farmers may have reduced access to necessary information regarding

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[265] *Ibid*.
[266] See Food and Agriculture Organisation, "The dual threat of extreme weather and the COVID-19 crisis: Anticipating the impacts on food availability" (13 July 2020) <www.fao.org/3/cb0206en/CB0206EN.pdf>
[267] See Food and Agriculture Organisation, "Agri-food markets and trade in the time of COVID-19" (2020), online: <doi.org/10.4060/ca8446en> accessed 12 August 2020.
[268] See Máximo Torero, "Without food, there can be no exit from the pandemic" (23 April 2020), online: <www.nature.com/articles/d41586-020-01181-3?proof=trueMay%2525252F>.
[269] *Supra* note 168 at 3.
[270] *Ibid.*

sustainable practices for climate change adaptation and mitigation measures to implement in their agricultural activities, the communication gap can increase the vulnerability of the agricultural sector to climate change, and exacerbate food insecurity.

As discussed above, the effects on food security have numerous impacts and are experienced in varying degrees in different countries and various communities around the world. Poor and least developed countries, which do not have adequate resources to mitigate and adapt to these impacts, are affected more by climate change and COVID-19 mitigation effects on food security. When communities experience these impacts, they inevitably produce unfavourable implications on the human rights of the people. Hence, the need for States to ensure that adaptation and mitigation measures are effective to protect the right to food.

### 3.3 Human Rights Implications of the Impacts of Climate Change and the COVID-19 Pandemic on Food Security

The varied impacts that the dual phenomenon of climate change and the COVID-19 pandemic produce on food systems and food security threaten the enjoyment of a range of human rights, such as the right to life, food, adequate standard of living, education, and the highest attainable standard of living. Asides the right to food, which has been discussed extensively in the second chapter of this thesis, and is apparently affected by the adverse impacts of the crises on food security, other interconnected rights are similarly jeopardised by the increasing impacts that climate change and COVID-19 crises have on people's well-being.

The violation of one human right often impairs the enjoyment of other human rights because human rights are interdependent, indivisible, and interrelated. Beginning with the most obvious, the right to food, which entails the right of every individual to have regular, permanent and unrestricted access to quantitatively and qualitatively adequate and sufficient food, is significantly implicated by the impacts on the food system. Article 11 of the ICESCR in its provision of the right to an adequate standard of living, recognises the right to adequate food. As noted prior, this right is realised when every man, woman, and child, alone or in community with others, has physical and economic access at all times to adequate food or means for its

procurement. The effects of the changing climate and the COVID-19 pandemic on food availability, accessibility, utilisation, and stability, discussed above clearly hinder people's ability to enjoy their right to food, as food supply is hampered, food quantity and quality are affected, food access (physical and economic) is hindered, and people do not enjoy stable access to food. Similarly, the impacts impair the enjoyment of the highest attainable standard of physical and mental health.[271]

The availability of food and water is a fundamental prerequisite to the enjoyment of the human right to health. There are many studies indicating that food insecurity among children and adults has adverse health effects, including increased rates of iron-deficiency anemia, acute infection, chronic illness, and developmental and mental health problems.[272] In a study conducted by Seligman et al, a number of chronic diseases were linked to food insecurity and malnutrition in adults.[273] These study outcomes reveal that social determinants of health play a pivotal role in the enjoyment of the human right to health. Health is not solely dependent on the provision of health care facilities, but also on the availability and consumption of adequate food that provides sufficient nutrition required for healthy development of the human body. The drafting history of Article 11 of the ICESCR, which provides for the right to health confirms that the reference to 'the highest attainable standard of physical and mental health' is not confined to the right to health care, but embraces a wide range of socio-economic factors indispensable to a healthy life,

[271] UN General Assembly, International Covenant on Economic, Social and Cultural Rights, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3, Article 12. The right to health is also recognized in several global and regional instruments, such as the 1965 International Convention on the Elimination of All Forms of Racial Discrimination, art. 5 (e) (iv); 1979 Convention on the Elimination of All Forms of Discrimination against Women, arts. 11 (1) (f), 12 and 14 (2) (b); 1989 Convention on the Rights of the Child, art. 24; 1990 International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families: arts. 28, 43 (e) and 45 (c); 2006 Convention on the Rights of Persons with Disabilities, art. 25. The African Charter on Human and Peoples' Rights (1981), Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights (1988), and the European Social Charter (1961, revised in 1996). The American Convention on Human Rights (1969) and the European Convention for the Promotion of Human Rights and Fundamental Freedoms (1950) contain provisions related to health, such as the right to life, the prohibition on torture and other cruel, inhuman and degrading treatment, and the right to family and private life.

[272] See Meredith Kursmark and Michael Weitzman, "Recent Findings Concerning Childhood Food Insecurity" (2009) 12:3 *Current Opinion in Clinical Nutrition & Metabolic Care* 310-316.
See also Linda Weinreb et al, "Hunger: Its Impact on Children's Health and Mental Health (2002) 110:4 *Pediatrics* 1-9.

[273] See Hilary Seligman, Barbara Laraia and Margot Kushel, "Food Insecurity is Associated with Chronic Disease among Low-Income NHANES Participants" (2010) 140:2 J Nutr. 304-310.

extending to underlying determinants, including an adequate supply of safe food and nutrition, access to safe and potable water and adequate sanitation, and a healthy environment.[274]

Food insecurity has also been shown to compromise dietary intake potentially resulting in malnutrition and, subsequently, poor academic achievement.[275] Hunger and malnutrition impair children's learning abilities. It may force them to drop out of school and work instead, thus undermining their enjoyment of the right to education.[276] Also, to be free from hunger and malnutrition, individuals need to know how to maintain a nutritious diet and have the skills and capacity to produce or obtain food for their consumption.[277] This intersectionality of food insecurity and other human rights becomes amplified in contexts of poverty. It is the more reason why climate change effects and COVID-19 mitigation measures have more critical implications in developing countries. The adverse impacts on food security also compound access to education issues in such countries, which are unable to quickly transition to virtual means of learning, adopt safe procedures, and continue with education as usual. Even in cases where alternate means of learning have been adopted, this has prevented children's access to food usually gotten during school feeding programs. In school-age, food insecurity causes several damages to children. It can lower school enrolment and attendance, and limit the capacity to concentrate and perform successfully in school.[278] It can also lead to malnutrition among children, and can translate to poor cognitive growth and low educational achievement.[279]

The foregoing implications of food insecurity on health and education can further impair the capability of vulnerable persons to gain their living by engaging in work that they freely choose

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[274] See U.N. Economic & Social Council (ECOSOC), Committee on Economic, Social & Cultural Rights (CESCR), General Comment No. 14: The Right to the Highest Attainable Standard of Health, U.N. Doc. E/C.12/2000/4 (11 August, 2000) para 4.
[275] See Erin Faught et al, "The Association between Food Insecurity and Academic Achievement in Canadian School-aged Children"(2017) 20:15 Public Health Nutrition 2778-2785 at 2783.
[276] See United Nations Office of the High Commissioner for Human Rights, "The Right to Adequate Food, Fact Sheet No. 34", online (pdf): <www.ohchr.org/Documents/Publications/FactSheet34en.pdf> at 6, accessed 19 Kuy 2020.
[277] *Ibid.*
[278] See Pasquale De Muro and Francesco Burchi, "Education for Rural People and Food Security, A Criss Country Analysis" (Food and Agriculture Organisation: Rome, 2007) at 3.
[279] See Robert Black, et al, "Maternal and child undernutrition and overweight in low-income and middle-income countries" (2013) 382 The Lancet 427–451 at 442-443. See also Maurice Mutisya et al, "The effect of education on household food security in two informal urban settlements in Kenya: a longitudinal analysis" (2016) 8 Food Sec. 743–756.

or accept.[280] Moreso, it can prevent them from working at all due to ill-health or lacking requisite skills required for decent paying jobs. This, in turn, reduces their financial capacity to maintain an adequate standard of living, including their ability to afford basic amenities such as food, clothing, and housing.[281] With this, the right to life is also affected.[282]

The interaction of human rights and food insecurity within the context of the climate and health crises amplify vulnerabilities in communities that lack financial, technological and technical resources to adapt to the adverse effects. Even measures adopted to mitigate these problems endanger food security. In addition to the effects of COVID-19 mitigation measures on food security discussed above, climate change mitigation measures also have an ambiguous relationship with food security. On the one hand, the dangers of climate change require States to act swiftly by mitigating and adapting to its effects. On the other hand, human rights and the current food and nutrition needs could be negatively affected in both foreseen and unanticipated ways.[283] An example of this is evident in the contention between initiatives to advance sustainable agricultural practices and the effects of such measures on individuals' access to food. Saab engages this controversy as she highlights the different perspectives of strategies that increase food production vis a vis the continued access of individuals to food. For instance, while climate ready seeds, which are genetically engineered to be resistant to certain climatic conditions associated with climate change, are intended to maintain or increase food production in light of adverse climatic conditions, intellectual property rights associated with these seeds may hinder access to seeds by raising the prices significantly, consequently undermining the realization of the right to food.[284]

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[280] UN General Assembly, International Covenant on Economic, Social and Cultural Rights, 16 December 1966, United Nations, Treaty Series, vol. 993, p. 3, Article 6.
[281] *Ibid*, art. 11.
[282] UN General Assembly, International Covenant on Civil and Political Rights, 16 December 1966, United Nations, Treaty Series, vol. 999, p. 171, Article 4. The right to life has been interpreted to imply the protection of the right to food. Examples of cases wherein this interpretation has been adopted include *People's Union for Civil Liberties ("PUCL") v. Union of India*; *SERAC v. Nigeria*; *Centre for Minority Rights Development (Kenya) and Minority Rights Group International on behalf of Endorois Welfare Council* v. *Kenya*. See generally United Nations General Assembly, Human Rights Council Twenty Eighth Session, "Report of the Special Rapporteur on the Right to Food, Hilal Elver, Access to Justice and the Right to Food: The Way Forward" (12 January 2014) A/HRC/28/65.
[283] See Elisabeth Caesens and Maritere Padilla Rodríguez, "Climate Change and the Right to Food, A Comprehensive Study" 8 Heinrich Böll Foundation Publication Series on Ecology at 33.
[284] See Anne Saab, Narratives of Hunger in International Law: Feeding the World in Times of Climate Change (Cambridge University Press, 2019) at 4-9, 188.

Furthermore, the reallocation of resources to the benefit of clean energy may significantly jeopardise agricultural activities. Some mitigation measures rely on resources, like land and water, that are currently devoted to food production, exacerbating tensions between fighting climate change in the long term and securing the availability, accessibility, and adequacy of food supplies and nutrition in the short term.[285] The IPCC affirms that land-based mitigation necessary to stabilize global temperature can have a more significant impact on food prices than the climate impacts themselves have on reduced crop yields because it leads to less land available for food production, potentially lowering food supply, and therefore increasing food prices.[286] Increased prices can also cause a shift in consumption patterns from demand for more nutritious food to cheaper food, which are often less nutritious, thus increasing the number of malnourished people.[287] It is noteworthy that all these resulting impacts disproportionately affect vulnerable populations like children, elderly people, persons with disabilities, pregnant women, indigenous peoples, and other marginalized groups, who are already at greater risk of food insecurity.

[285] *Supra* note 284.
[286] *Supra* note 169 at 494-497.
[287] *Supra* note 169 at 497.

## 4.0 A Rights-Based Approach to Addressing the Impacts of Climate Change and the COVID-19 Pandemic on Food Security

In view of the challenges to food security and human rights discussed above, this chapter examines how States can alleviate those impacts in order to ensure the right to food. It begins by considering the obligations of States within the context of the impacts of the crises and concludes by analysing the measures that Nigeria has adopted in addressing these issues.

### 4.1 Realising the Right to Food through Adaptation and Mitigation

The implications arising from the impacts of climate change and the COVID-19 pandemic require States to take specific measures towards alleviating or eliminating the crises and the adverse effects that they produce on food security. In doing so, however, it is important that measures adopted do not further complicate the enjoyment of human rights. The obligations of States to respect, protect and fulfill the right to food require that they adapt to and mitigate the challenges threatening food security. This obligation is not only affirmed in Article 2(1) of the ICESCR, but also in Article 3(1) of the UNFCCC, which provides that "Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects."[288]

Under Article 11 of the ICESCR, the principal obligation of States is to take steps to achieve progressively the full realization of the right to adequate food. This requires States to adopt measures aimed to better shield vulnerable segments of the population from the impact of climate change and the COVID-19 crisis. The CESCR emphasised the need for States to work towards "the adoption of a national strategy to ensure food and nutrition security for all, based on human rights principles that define the objectives and the formulation of policies and corresponding benchmarks."[289] According to Schutter, such a national strategy should comprise

[288] UN General Assembly, United Nations Framework Convention on Climate Change: R*esolution / Adopted by the General Assembly*, 20 January 1994

[289] See Committee on Economic, Social and Cultural Rights, CESCR General Comment No. 12: The Right to Adequate Food (Art. 11), Adopted at the Twentieth Session of the Committee on Economic, Social and Cultural Rights, on 12 May 1999 (Contained in Document E/C.12/1999/5), para. 21.

the establishment of appropriate institutional mechanisms in order to "(a) identify, at the earliest stage possible, emerging threats to the right to adequate food, by adequate monitoring systems; (b) assess the impact of new legislative initiatives or policies on the right to adequate food; (c) improve coordination between relevant ministries and between the national and subnational levels of government, taking into account the impact on the right to adequate food, in its nutritional dimensions, of measures taken in the areas of health, education, access to water and sanitation, and information; (d) improve accountability, with a clear allocation of responsibilities, and the setting of precise time frames for the realization of the dimensions of the right to food that require progressive implementation; and (e) ensure the adequate participation, particularly of the most food-insecure segments of the population."[290]

The kind of strategies adopted by States should take into account environmental and cultural contexts at the regional and local levels, given the varied nature and degree of climate change impacts on food systems components, as well as the wide variation in the types of agroecosystems and management, and socio-economic conditions.[291] The FAO recommends the following practices for adapting to and mitigating climate change in the food and agriculture sector:

*i. Adaptation*

a. Protecting local food supplies, assets and livelihoods against the effects of increasing weather variability and increased frequency and intensity of extreme events through general risk management;
b. Avoiding disruptions in global and local food supplies due to changes in temperature and precipitation regimes through more efficient agricultural water and irrigation management;
c. Protecting ecosystems through the provision of environmental services like the use of degraded or marginal lands for biodiversity conservation.[292]

[290] See Report of the Special Rapporteur on the right to food, Olivier De Schutter, Building Resilience: A Human Rights Framework for World Food and Nutrition Security, A/HRC/9/238 (September 2008) at 10.
[291] *Supra* note 166 at 465.
[292] *Supra* note 168 at 31.

*ii. Mitigation*

a. Reducing emissions of carbon dioxide through better control of wildfires, reduction in the rate of land conversion and deforestation, and adoption of alternatives to the burning of crop residues after harvest, etc;
b. Reducing emissions of methane and nitrous oxide, for example, through more efficient management of livestock waste and of irrigation water on rice paddies, more efficient applications of nitrogen fertilizer on cultivated fields, and through improved nutrition for ruminant livestock, etc;
c. Sequestering carbon, for instance, through improved management of soil organic matter, pastures and grazing practices on natural grasslands.[293]

With regard to the COVID-19 pandemic, it is important to note that unlike the ICCPR, the ICESCR contains no provision on derogation. Hence, States can not, on the basis of the pandemic, rely on 'public emergency' as justification for failing in its obligations in ensuring the right to food. Nonetheless, the ICESCR provides that a State may subject the rights contained in the Covenant to "limitations as are determined by law only in so far as this may be compatible with the nature of these rights and solely for the purpose of promoting the general welfare in a democratic society."[294] Therefore, whatever limitations that may be adopted by States must fulfil the conditions as provided in the Covenant and must not derogate from the nature of the rights subject to limitation.[295] The CESCR has observed in its General Comment on the right to health that limitations must be proportional and of limited duration and subject to review.[296] Müller

[293] *Supra* note 168 at 59. See also Food and Agriculture Organisation, "Climate Change and Food Security", online (pdf): <www.fao.org/climatechange/16606-05afe43bd276dae0f7461e8b9003cb79.pdf> accessed 12 May 2020.
[294] Art. 4, ICESCR. Alston and Quinn note that 'general welfare' is to be interpreted restrictively in the context of Article 4 ICESCR. See also Alston and Quinn's analysis of the *travaux préparatoires* of Article 4 in Alston and Quinn, 'The Nature and Scope of States Parties' Obligations under the International Covenant on Economic, Social and Cultural Rights', (1987) 9 *Human Rights Quarterly* 156 at 201-202.
[295] See UN Commission on Human Rights, The Siracusa Principles on the Limitation and Derogation Provisions in the International Covenant on Civil and Political Rights, 28 September 1984, E/CN.4/1985/4. The Siracusa Principles are in relation to the ICCPR but it sheds light on the interpretation of key terms in the ICCPR derogation clause. See also Amrei Müller, "Limitations to and Derogations from Economic, Social and Cultural Rights" (2009) 9:4 Human Rights Law Review 557–601.
[296] Committee on Economic, Social and Cultural Rights, General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12) Adopted at the Twenty-second Session of the Committee on Economic, Social and Cultural Rights, on 11 August 2000 (Contained in Document E/C.12/2000/4) para. 29.

notes that in different situations in which economic, social and cultural rights have been limited on the basis of economic difficulties, prevailing severe poverty, armed conflict and natural disasters, the CESCR has called on States to guarantee the provision of basic services, including the health and education infrastructure, and respect for minimum core obligations in the context of developmental policies.[297]

Some specific measures to ensure adherence to the right to food in light of the COVID-19 pandemic and in line with necessary health practices are:

a. States should adopt social protection mechanisms for marginalized and vulnerable groups. Such measures may include basic income programs and distribution of food, preferably food produced by local small-scale food producers, in order to foster domestic food production;
b. States should ensure that small-scale food producers maintain their capacity to produce and provide adequate food. This can be achieved through fostering supply chains and ensuring the adequate functioning of local food markets;
c. In order to ensure access to adequate food to people that depend on institutional support, States should maintain or find appropriate alternatives to school feeding programs, food shelters and banks or other similar institutions;
d. States should ensure the adequate protection of agricultural workers, including migrant workers, including the provision of suitable and healthy working conditions;
e. States should implement measures to ensure availability of food at all times, including measures to prevent panic buying and food waste, etc.[298]

In adopting the above measures and other practices to mitigate and adapt to the impacts of the crises with a rights-based approach, the principles of IHRL should be taken in taken into account. Some of these considerations are discussed within the context of this work below.

[297] *Supra* note 295 [Müller].
[298] See Food First Information and Action Network, "Impact of COVID-19 on the Human Right to Food and Nutrition" (April 2020), online (pdf): <www.fian.org/files/files/Preliminary_monitoring_report_-_Impact_of_COVID19_on_the_HRtFN.pdf > at 9, accessed 20 October 2020.

### *iii. Transparency, Participation and Inclusion*

There is still much uncertainty regarding the various possible climate change impacts in specific places. Many food and agriculture workers, particularly in developing countries, remain largely unaware of climate change effects and specific projections that can affect agricultural activities and food access. Mitigating and adapting to climate change involves managing risks. Decision-making on such management can not be possible without quality information about climate risks, adaptive measures, adopting good practices to strengthen the resilience of vulnerable livelihood systems, and finding new institutional and technological solutions.[299] Technological solutions can include digitization strategies that will aid most vulnerable communities to access strategic information on weather forecasts, markets, pricing, and the ongoing COVID-19 humanitarian response.[300]

As the FAO notes, this can be achieved by investing in improved information to reduce the degree of local uncertainty, or by spreading the uncertain risk through some form of insurance scheme. In ensuring access to quality information on climate change adaptation and mitigation, attention should be given to vulnerable people and targeted measures are needed to safeguard their rights and interests. For example, climate data should be made available and accessible to rural farmers by putting in place institutional structures to disseminate information to farmers in rural areas who would, otherwise, not receive such information. Successful mitigation and adaptation to climate change requires reaching the most vulnerable, who may not have easy access to and appropriate understanding of existing climate information.[301]

An implication of climate variability and uncertainty is that traditional knowledge about future weather patterns or local adaptation strategies may not necessarily be suitable for new climatic conditions. Therefore, for successful adaptation, there will be increased reliance on scientific knowledge and bridging the gap between traditional and scientific perceptions of climate change.

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[299] *Supra* note 168.
[300] See United Nations Development Programme, "Transforming Food and Agriculture: Creating Food Security while Fighting Climate Change" (5 June 2020), online: <reliefweb.int/report/world/transforming-food-and-agriculture-creating-food-security-while-fighting-climate-change>.
[301] *Supra* note 168 at 36.

In order to reach all stakeholders regardless of different education and resource levels, States are encouraged to adopt participatory approaches to facilitate inclusion in understanding climate impacts and designing necessary adaptation and mitigation measures.[302] This is similarly applicable with respect to the COVID-19 pandemic.

### *iv. Vulnerability and Empowerment*

Adaptation and mitigation practices will, no doubt, require modifying behaviours and changing practices. These modifications are likely to concern consumption patterns, health care, food and agricultural production practices, sources and use of energy, and livelihood strategies.[303] In order to achieve this, States will need to strengthen resilience and empower people, including the most vulnerable, to adopt practices that enable them to "protect existing livelihood systems; diversify their sources of food and income; change their livelihood strategies; migrate if there is no other option."[304] Additional measures for improving farming practices include: "research and dissemination of crop varieties and breeds adapted to changing climatic conditions; effective use of genetic resources; promotion of agroforestry, integrated farming systems and adapted forest management practices; improved infrastructure for small-scale water capture, storage and use; improved soil management practices."[305]

Adequate and accessible health care also needs to be provided in light of increased incidence of water-borne diseases in flood-prone areas, change in disease vectors and habitats for existing diseases, and emergence of new diseases, which all pose risks for food security, food safety and human health.[306] Additionally, Agrawala and Carraro acknowledge the need to financially empower farmers. They assert that the provision of small-scale financial products to low-income and otherwise disadvantaged groups by financial institutions can facilitate their adaptation to climate change.[307]

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[302] *Ibid.*
[303] *Ibid* at 41.
[304] *Ibid.*
[305] *Ibid.*
[306] *Supra* note 168 at 42.
[307] *Supra* note 1 at 475.

*v. Good Governance and Accountability*

Strengthening governance and accountability institutions is key in order to ensure sustainability of food and agriculture systems, which will further aid the realisation of the right to food.[308] In the Voluntary Guidelines on the Right to Food, the FAO notes that "States should promote and safeguard a free, democratic and just society in order to provide a peaceful, stable and enabling economic, social, political and cultural environment in which individuals can feed themselves and their families in freedom and dignity."[309] Good governance will ensure that institutions function effectively to design, adopt and monitor food security measures, especially in light of the threats that adaptation and mitigation measures pose to the right to food.[310]

Efforts should be made to reform policy frameworks and adopt legislative measures to protect the right to food. It is important that every individual enjoys this right, and that corresponding obligations be imposed on public and private actors who may have an impact on the enjoyment of the right to food. The provision of a legal framework creates security backed by institutional mechanisms, ensuring that the hungry and the malnourished have legal claims against those whose actions or inactions have an impact on their food security.[311] The FAO has noted that in order to ensure the progressive realisation of the right to food at the domestic level, it is imperative that constitutional principles and framework laws are established as a means of providing an appropriate institutional structure.[312] To this end, States are urged to make constitutional provisions guaranteeing the right of individuals to food.

The FAO encourages States to adopt a framework legislation ensuring that the right to food is justiciable before national courts or that other forms of redress are available, so that in situations such as the ongoing crises, when disruptions to food systems occur, the other branches of

[308] *Supra* note 300.
[309] See Food and Agriculture Organisation, "Voluntary Guidelines to Support the Progressive Realisation of the Right to Adequate Food in the Context of National Food Security", online(pdf): <www.fao.org/3/a-y7937e.pdf> at 9, accessed 15 August 2020.
[310] *Supra* note 290.
[311] *Supra* note 290 at 11.
[312] See Food and Agriculture Organisation, "Fifteen Years Implementing the Right to Food Guidelines, Reviewing Progress to Achieve the 2030 Agenda" (2019), online (pdf): <www.fao.org/3/ca6140en/ca6140en.pdf> at 13, accessed 21 September 2020.

government will not be allowed to remain passive.[313] Attention should be paid to the rights of women, who despite not having control of family resources, often bear the primary responsibility for feeding the family.[314] Such accountability mechanisms may contribute to ensure that where macro-economic or social policies are misguided or are not well targeted, it will be identified and corrected at an early stage.[315] As recommended by the FAO, making the right to food justiciable is important to ensure its realisation. The following section discusses benefits and challenges of right to food justiciability.

### *a. Justiciability of the Right to Food: Limitations and Benefits*

Human rights duties and obligations would have little meaning if duty bearers can not be held accountable for their violations. Rights holders and the society at large should be able to hold duty bearers accountable. This is possible only if the rights in question are justiciable within the States concerned. Whether human rights are 'justiciable' or not is dependent on the legal framework of the rights concerned, especially the status of such rights within States' constitutions. Dutta defines justiciability as "the possibility that a recognised human right can be invoked before a judicial or quasi judicial body which can determine as to whether the right has been violated and recommend appropriate measures in case of violation."[316] Therefore, the right to food is justiciable only when there is a legislation creating a distinct entitlement for food rights that is capable of enforcement.

Right to food justiciability may be determined at the national level, regional or international level. Conceptually, justiciability of the right to food within national, regional and international arenas receives support under international and regional law.[317] However, justiciability of the right to food at the domestic level depends upon the recognition of international law as a part of the municipal law and the legal protection of the right to food in the constitution or other legal

[313] *Ibid*.
[314] The care role that women play in the family is important in achieving household food and nutrition. See *Supra* note 290 at 10.
[315] *Supra* note 290.
[316] See Gargi Dutta, "Justiciability of Right to Food" (2015) 5:1 International Journal of Scientific and Research Publications at 1.
[317] *Ibid*.

framework of the country.[318] At the national level, the recognition of the right to food as a justiciable right is increasingly gaining ground. Since the adoption of the Right to Food Guidelines, several States, like Brazil, Colombia, Cuba, Ecuador, Guatemala, Haiti, India, Iran, Malawi, Mexico, Nicaragua, South Africa, etc., have incorporated the right to food in their national legislations.[319]

While it is clear that the justiciability of the right to food will continue to expand over time, the right is not fully recognised in all countries or in all circumstances. There are arguments concerning the limitations of right to food justiciability. First, within the broader context of economic, social and cultural rights, some argue that the nature of these rights renders them unable to be adjudicated by the Courts. They argue that economic, social and cultural rights, as stated in the ICESCR, are not justiciable because they are "imprecise, resource-demanding, and are subject to available resources and progressive realisation."[320] Furthermore, the enforcement of the right to food through the judiciary is also queried for its limited reach in practice. In many countries, the judiciary is often inaccessible to the victims of right to food violation.[321] Such victims are mostly underprivileged. Due to poverty and ignorance, they are unable to take up their grievance before the judiciary, and there is usually limited provision for legal aid, especially in relation to economic, social and cultural rights.[322] Similarly, because provisions for the right to food are mostly scattered in various domestic schemes, legislations and judicial pronouncements, victims and lawyers may have limited knowledge of the entitlements and the justiciability of the right becomes difficult.[323]

Nonetheless, the justiciability of the right to food has certain advantages. Explicit acknowledgment of the right to food within a country's constitution is a major advancement due

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[318] *Ibid* at 3.
[319] See Food and Agriculture Organisation, "The Right to Food Around the Globe", online: <http://www.fao.org/right-to-food-around-the-globe/countries/en/>.
[320] See Food and Agriculture Organisation, "The Right to Food Guidelines Information Papers and Case Studies", online: <http://www.fao.org/3/a0511e/a0511e03.pdf> at 86. See also Ida Elizabeth Koch and Jens Vedsted-Hansen, "Judicialised Protection of International Human Rights and the Issue of Power Balance", in Martin Scheinin, ed, *The Welfare State and Constitutionalism in Nordic Countries, The Nordic Council of Ministers* (2001) at 198.
[321] See Gargi Dutta, "Justiciability of Right to Food" (2015) 5:1 International Journal of Scientific and Research Publications at 2.
[322] *Ibid*.
[323] *Ibid*

to the primacy that the constitution has over other laws,[324] especially in situations of conflicting provisions. Articulating the right to food in a country's constitution improves accountability, as every government policy must be consistent with the constitutional provision, and acts deemed unconstitutional will be annulled or rendered inapplicable.[325] Constitutional recognition of the right to food also empowers individuals to demand other laws and policies from their government that create a more enabling environment for the realization of the right to food.[326] Furthermore, the process of seeking justice from the Courts makes room for judges to apply international standards of the right to food to domestic laws during interpretation. This also aids clarification on any ambiguous provisions that may surround the guarantee of the right to food. Additionally, because policies change and are subject to the agenda of the government in power, constitutional recognition of the right to food creates certainty in the protection of the right to food at all times, even through government transitions and change.

In sum, justiciability of the right to food offers many benefits in ensuring that States respect, protect and fulfil the right to food. By offering rights-holders forms of reparation in case of a violation and subjecting duty-bearers to comply with their obligations under the right to food, justiciability enhances the ability of individuals to enjoy the right to food in practice.

vi. *International Cooperation and Assistance*

States have the primary responsibility for their own economic and social development, including the progressive realization of the right to adequate food in the context of national food security. However, States' duties to respect, protect and fulfil the right to food are not only restricted to their national territories. Pursuant to Article 56 of the Charter of the United Nations, States are obliged to take joint and separate action in cooperation with the international community to respect and observe human rights and freedoms.[327] As Schutter notes, "States are under an obligation to contribute to the realization of the right to food in other countries and to shape an

[324] See Olivier De Schutter, "Countries Tackling Hunger with a Right to Food Approach" (May 2010) Briefing Note 01, online: <https://europa.eu/capacity4dev/file/13018/download?token=GdEAAXv2 > at 5.
[325] See Nandini Ramanujam, Nicholas Caivano & Semahagn Abebe, "From Justiciability to Justice: Realising the Human Right to Food" (2015) 11:1 JSDLP 1 at 11.
[326] *Ibid*.
[327] See also Preamble para. 6, UNFCCC, Art. 2, ICESCR.

international environment that enables national governments to realize the right to food under their jurisdiction.…The international community and the UN system, including the FAO, as well as other relevant agencies and bodies according to their mandates, are urged to take actions in supporting national development efforts for the progressive realization of the right to adequate food in the context of national food security."[328]

Furthermore, industrialised nations have an obligation under the UFCCC to support climate change activities in developing countries by providing financial support for climate change action.[329] Developed and developing countries should act in partnership to support their efforts to achieve the progressive realization of the right to adequate food through technical cooperation, including institutional capacity building, and transfer of technology on mutually agreed terms.[330] States should endeavor to seek assistance and cooperate in ensuring the realization of the right to food in the face of the climate and health crises.

## 4.2 Realising the Right to Food in Nigeria in the face of Climate Change and the COVID-19 Pandemic

The human rights approach to food security remains far-fetched in Nigeria despite the country being party to international treaties that affirm the right to food. Having ratified the ICESCR, Nigeria is under the obligation to respect, protect and fulfil the right to food. Accordingly, the country is obliged to take steps to ensure that individuals enjoy the full realisation of this right by putting in place measures and taking actions towards empowering people to physically and economically access adequate food and enforce the right. However, this is far from the reality in Nigeria. Despite Nigeria's wealth and resources, food insecurity and hunger are major problems. The poor economic state of the country contributes to its food insecurity. Acute levels of

[328] See also United Nations Conference on Trade and Development, São Paulo Consensus, (TD/410, 25 June 2004), para. 5.
[329] Industrialized nations agree under the UNFCCC to support climate change activities in developing countries by providing financial support for action on climate change- above and beyond any financial assistance they already provide to these countries. See Art. 4(5), UNFCCC.
[330] *Supra* note 300. See also United Nations & United Nations International Conference on Financing for Development, (2003) Financing for development: Monterrey Consensus of the International Conference on Financing for Development: The final text of agreements and commitments adopted at the International Conference on Financing for Development, Monterrey, Mexico, 18-22 March 2002. New York: United Nations.

poverty, especially in the north, remain persistently high, with half the people in the country estimated to be living below the poverty line.[331] Also, climate change is affecting weather patterns for agricultural productivity and putting pressure on land, with growing tensions and violence between pastoralists and farmers leading to a lack of investment and failure to maximize the Nigeria's vast agricultural potential.[332]

Persistent inequalities and poverty are prevalent across the country, particularly marked in the northeast and northwest.[333] According to the World Food Programme (WFP), in Nigeria, over 40 percent of children aged 0-59 months are chronically malnourished, 11 percent are acutely malnourished, and 32 percent are underweight.[334] Evidently, a lot is required to be done to ensure food security and achieve zero hunger in Nigeria. Moreso, the country needs to design people-centric policies that guarantee the human rights of individuals as measures are devised to tackle the challenges of climate change on food security in Nigeria, and the added complications from the COVID-19 pandemic.

### 4.2.1 The Right to Food in Nigeria

The right to food is provided in a number of international treaties to which Nigeria is party.[335] Some of these instruments provide for an explicit right to adequate food, while some others make provisions for certain rights from which the right to food can be inferred. Also, the Constitution of the Federal Republic of Nigeria 1999 as amended, in Section 16 (2) (d) states that "the State shall direct its policy towards ensuring that suitable and adequate shelter, suitable and adequate food, reasonable national living wage, old age care and pensions, and unemployment, sick benefits and welfare of the disabled are provided for all citizens." Although this provision is non-justiciable, the government is under an obligation to ensure adequate policy direction on food

[331] See Global Network Against Food Crises and Food Security Information Network, "2020 Global Report on Food Crises" at 145.
[332] *Ibid*.
[333] See Belinda Archibong, "Historical Origins of Persistent Inequality in Nigeria" (2018) 46:3 Oxford Development Studies 325-347 at 326-330.
[334] *Supra* note 331.
[335] For example, International Covenant on Economic, Social and Cultural Rights; , Convention on the Rights of the Child; Convention on the Elimination of All Forms of Discrimination Against Women; Convention on the Rights of Persons with Disabilities.

security. It is also obliged under the ICESCR to take steps to ensure the full realization of the right to food.[336]

In order to achieve the zero hunger goal, especially in light of the climate and health crises, the human rights approach provides a holistic, cross-sectoral, and people-centric framework for ending hunger, improving nutrition, and promoting sustainable agriculture. The attainment of food security can only be achieved "within a broader conceptualisation of people's lives, as it is the conduct of those lives, not the particularities of the food system, which should be the focal point of inquiry."[337] The following section delves into the food security policy framework in Nigeria and measures that have been adopted to address the COVID-19 and climate crises.

### 4.2.2 Overview of the History of Nigeria's Agriculture Policy

Nigeria, rich in agricultural resources, is unfortunately one of the highest food insecure countries in sub-Saharan Africa. With a population of up to 200 million people, and a growth rate of about 2.58 percent per annum,[338] feeding a rapidly rising population constitutes a social and economic problem. In the 40s and early 50s, Nigeria had little or no problems with its food production. The country was able to feed her citizens and at the same time export the surplus food items.[339] Every region in the country specialised in the production of one or two major crops – food or cash crops – and together the country was relatively self-sufficient in food production.[340] Nigeria had the groundnut pyramids in the north, the cocoa maintains in the west, oil palm and kernel heaps in the east and the rubber plantation in the mid-west.[341] But upon the discovery of oil in 1956 and its exportation in 1958, things began to change rapidly. As oil prices increased, the government's interest in agriculture waned, this marked the beginning of the country's agriculture sector's

[336] Art. 2, ICESCR.
[337] S*upra* note 326.
[338] See World Population Review, "Nigeria Population" (2020), online: <worldpopulationreview.com/countries/nigeria-population> accessed 19 September 2020. See also Olu Ajakaiye & Bayo Akinbinu, eds., *Strategic Issues in Nigerian Development in a Globalising And Liberalising World* (Nigerian Institute of Social and Economic Research, 2000) at 35.
[339] See Peter Adebayo & Emmanuel Ojo, "Food Security in Nigeria: An Overview" (2012) 1:2 *European Journal of Sustainable Development* at 205.
[340] *Ibid.*
[341] See Godwin Uddin, *Food Insecurity in Selected African Economies: 1940-2015* (Exceller, 2019) at 8-11.

decline. The shift to oil exportation had negative effects not only on food production, but also on the population that relied on subsistence agriculture – jobs were lost, and consequently people's capacity to access food was affected. Till this day, the nation's economy is struggling from the adverse effects of this neglect, causing a rise in cost of food items, especially the prices of staple foods. Significantly, the price of rice has increased by over 100 per cent since 2006.[342]

Nigeria has made several attempts to increase its quantity and quality of food production. Some of these attempts have culminated in several programmes and projects such as the Nationally Coordinated Food Production Programme; Operation Feed the Nation, Green Revolution Programme, Agricultural Development Project, Fadama I, II and III, Vision 2020, Agricultural Transformation Agenda, and the current Agriculture Promotion Policy amongst others.[343] These policies and programmes were aimed at boosting agricultural production and solving the problem of food insecurity and poverty.[344] They have, unfortunately, yielded little results. The food security situation in the country has become even more heightened with the increasingly changing climate and the impacts of the ongoing pandemic. A recent study by the International Food Policy Research Institute (IFPRI) confirms that the pandemic, as well as associated lockdowns, have both had significant adverse impacts on individual and household food security in Nigeria.[345]

The Agricultural Transformation Agenda and the Agriculture Promotion Policy are the two most recent policies governing Nigeria's agriculture sector. After years of neglect and unsuccessful attempts with different programmes, the government of Nigeria implemented the Agricultural

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[342] *Supra* note 339.

[343] Nationally Coordinated Food Production Programme (NAFPP, 1972, Gowon); Operation Feed the Nation (PFN, 1976, Obasanjo); Green Revolution Programme (GRP, 1980, Shagari); Directorate of Food, Roads and Rural Infrastructure (DIFRRI, 1986, Babangida); National Agricultural Land Authority (NALDA, 1990, Babangida); National Programme on Food Security (NPFS, 2000, Obasanjo); National Food Security Programme (NFSP, 2003 Yar'Adua); Agricultural Transformation Agenda (ATA, 2011, Jonathan), and the current Agricultural Promotion Policy (APP, otherwise known as Green Alternative). See Gbolagade Babalola, *Essays on Agricultural Economy: Nonexperimental Writings on Agricultural Policy and Development Administration in Nigeria* (Xlibris AU, 2018) at 31.

[344] See Clementina Ajayi & Kemisola Adenagan, "Rights-Based Approach to Food and Nutrition Security in Nigeria" in Abiola Obayelu, ed., *Food Systems Sustainability and Environmental Policies in Modern Economies* (IGI Global, 2018) 217-234 at 226.

[345] See International Food Policy Research Institute, "Impacts of COVID-19 on Food Security, Panel Data Evidence from Nigeria" (August 2020), online (pdf): <ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/133866/filename/134078.pdf> accessed 11 September 2020.

Transformation Agenda (ATA) in 2011-2015. The focus of this strategy was to rebuild the relevance of the agricultural sector and refocus Nigeria's attention on agriculture by prioritising agriculture as a business driven by the private sector. Building upon the ideology of the ATA, the Agriculture Promotion Policy (2016-2020) aims to strengthen Nigeria's agribusiness performance, and "close the demand and supply gaps between crop and livestock production."[346]

As an agriculture policy document designed to ensure food security in Nigeria, the Agriculture Promotion Policy is conspicuously devoid of human rights principles, which strengthen the capacity of the policy's beneficiaries. Although the document mentions 'food as a human right' as one of the policy's guiding principles, the measures contained in it do not reflect a human rights approach. It proposed to focus "the policy instruments for agricultural development on the social responsibility of government with respect to food security, social security and equity in the Nigerian society; and compelling the government to recognize, protect and fulfill the irreducible minimum degree of freedom of the people from hunger and malnutrition." Despite this provision, without the institutional structures, and strengthening the capabilities of the people, this guiding principle remains good only on paper. There is currently no corresponding government action to translate the guiding principle of food as a human right from paper to practice. The State should recognise the right to food as a fundamental and justiciable human right of every individual in its Constitution. This will ensure that any law or policy that is inconsistent with realising the right to food will be of no effect. It could also adopt food security or right to food framework laws that define clear objectives, institutional responsibilities and overarching principles to shape policies and programmes and promote coherence.[347] In its General Comment 3, the CESCR affirms that legislation is highly desirable and may be indispensable in order to give effect to the rights guaranteed in the ICESCR.[348]

Other relevant strategy documents dealing with food security in Nigeria includes the National Agricultural Resilience Framework (NARF), which is aimed at strengthening the overall policy and institutional framework for improved resilience and adaptation to climate variability and

[346] *Supra* note 326 at 9.
[347] See Food and Agriculture Organisation, "The Right to Food, Legal Processes", online: <www.fao.org/right-to-food/areas-of-work/legal-processes/en/> accessed 12 August 2020.
[348] *Ibid.*

change in the agriculture sector.[349] Unfortunately, since the adoption of the NARF since 2015, it is still yet to be implemented.[350]

The Agricultural Sector Food Security and Nutrition Strategy (FSNS) was also developed to guide the activities of the Federal Ministry of Agriculture and Rural Development (FMARD) and the wider agricultural sector in Nigeria for improved nutrition. The strategy comprises eight interrelated areas, which notably include the following guidelines that indicate capability enhancement: "diversify household food production and consumption, especially targeting women, and increase access to micronutrient rich foods; build resilience and social protection nets through food and nutrition systems for vulnerable groups; and nutrition education, social marketing, behaviour change communication, and advocacy."[351] The FSNS especially targets vulnerable groups like women of child bearing ages, children 6-59 months old, school-aged children and internally displaced persons. It is worthy of note that persons with disabilities are not substantially factored in the document.

### 4.2.3 Nigeria's Climate Adaptation and COVID-19 Pandemic Response and Recovery Efforts

Since Nigeria submitted its First National Communication to the UNFCCC in 2003, the country has made some progress on climate change governance. Its national efforts to address climate change are guided by a number of principles geared towards integrating the country's climate change efforts to national development priorities and the framework of sustainable development, which ensures that climate change response must be sensitive to issues of equity, gender, children, youth and other vulnerable groups.[352] For improving policy formulation and co-ordination in this area, the Department of Climate Change (DCC) in the Federal Ministry of Environment is committed to introducing and implementing adaptation and mitigation measures necessary to reduce vulnerability to climate change. Nigeria has also issued a Sovereign Green

[349] Federal Ministry of Agriculture and Rural Development, *National Agriculture Resilience Framework* (Nigeria, 2015).
[350] *Supra* note 326 at 30.
[351] Federal Ministry of Agriculture and Rural Development, *Agricultural Sector Food Security and Nutrition Strategy* (Nigeria, 2016-2025).
[352] *Ibid*.

Bond to facilitate and assist Nigeria in meeting its Nationally Determined Contribution (NDC) target.[353] The Second Green Bond was launched in June 2019.

At the international level, Nigeria is a party to the UNFCCC and a signatory to both the Kyoto Protocol and the Paris Agreement. Furthermore, Nigeria subscribes to other key international agreements, including the ICESCR, the Sendai Framework for Disaster Risk Reduction (UNDRR)) and the United Nations Sustainable Development Goals (SDGs) for accelerated national development. In addition to these, there are policy initiatives at the national level to adapt to climate change. For example, the National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CNN) was formulated in 2011. The Action Plan outlined strategies for key priority areas: agriculture (crops and livestock); freshwater resources, coastal water resources and fisheries; forests, biodiversity; health and sanitation; human settlements and housing; energy; transportation and communications; industry and commerce; disaster, migration and security; livelihoods; vulnerable groups; and education.[354] With respect to agriculture in particular, the document recommends the adoption of improved agricultural systems for both crops and livestock, implementation of strategies for improved resource management, and focus on agricultural impacts in the savanna zones, particularly the Sahel, and areas that are likely to be most affected by the impacts of climate change.[355] There is also a National Policy on Climate Change and the National Adaptation Plan Framework. In the Nigeria's Third National Communication under the UNFCCC,[356] the following efforts for adaptation in crop and livestock management were highlighted:

a. Expanding and optimizing irrigation infrastructures as rain fed agriculture becomes unreliable;

[353] Nigeria is committed to reduce Greenhouse gas Emission by 20% unconditionally and 45% with international support. See Department of Climate Change website, online: <climatechange.gov.ng/national-determined-contributions/ climatechange.gov.ng/2020/09/21/brief-on-green-bonds/>.
[354] National Adaptation Strategy and Plan of Action on Climate Change for Nigeria (NASPA-CCN), 2011.
[355] *Ibid* at 16.
[356] Third National Communication (TNC) of the Federal Republic of Nigeria under the United Nations Framework Convention on Climate Change (UNFCCC) March 2020. See United Nations Climate Change website, online: <unfccc.int/documents/226453>

b. Adopting drought-tolerant and early maturing varieties of crops to guarantee profitable crop harvest under reduced water supply from rain and or prolonged dry period during the rainy season;
c. Diversifying livelihoods to improve income through developing capabilities for livelihood diversification;
d. Increasing and upgrading storage facilities for harvests;
e. Provision of efficient weather forecasting and timely dissemination of weather information in vernacular to farmers at the grassroots;
f. Effective pest control to minimise harvest losses;
g. Using cover crops to protect soils to control the loss of top soil;
h. Stabilizing gullies and erosion sites;
i. Improving monitoring and evaluation of agricultural programmes;
j. Providing agricultural insurance;
k. Enhancing agricultural extension services;
l. Planting of short-lived hardy crops for higher temperatures and short growing seasons;
m. Recharging wetlands, drilling boreholes and providing more irrigation water by building small reservoirs or mining water from boreholes around the wetlands;
n. Improving rural-urban transportation to make food more readily available particularly in the urban areas;
o. Introducing semi- intensive livestock keeping to eliminate or reduce the frequent conflicts between animal keepers and farmers;
p. Enrich rangelands with fast growing herbs/shrubs;
q. Expanding rain harvesting practices for livestock;
r. Designate more areas as grazing zone;
s. Building mutual trust and understanding between farmers & herdsmen;
t. Developing substitute for animal protein, for example, through breeding of edible insects.[357]

To combat the challenges faced in the agricultural sector as a result of the climate and health crises, significant efforts from all stakeholders across the value chain is required. On the efforts

[357] *Ibid*.

of the government in responding to the pandemic's impact on food security, the Federal Ministry of Agriculture announced the release of 70,000 metric tonnes of grains from the National Strategic Food Reserve for distribution to the most vulnerable people across the states in the country.[358] The Ministry is also ensuring that farmers receive fertilisers and improved seeds across the country in preparation for the farming season. The Federal Government of Nigeria has provided fiscal and monetary palliatives to mitigate the effect of the pandemic on the economy, businesses and individuals/households. Through the Presidential Fertiliser Initiative, the government reduced its fertilizer retail selling price by 10%.[359] The Ministry of Health also developed a Nigeria Food and Nutrition Response Plan for COVID-19 Pandemic, which seeks to mitigate the impact of the pandemic on the food system and ensure that nutrition is a key aspect considered in the national COVID-19 multi-sectoral pandemic response plan.[360]

Despite these commendable efforts, the lack of measurable metrics in the policy documents and action plan on climate change and COVID-19 mitigation measures poses difficulty in tracking progress and making comparisons against set targets. For example, the APP mentions transition towards the practice of climate-smart agriculture but gives no further information or data on how the government will achieve this transition. Given the country's population with 774 local governments in the country, it is also pertinent to clearly show how beneficiaries of these measures are selected. Furthermore, the country's National Communications under the UNFCCC do not clearly delineate proposed adaptation measures from the practices that have been executed or are ongoing. Furthermore, while the FSNS details a number of strategy outcomes, it fails to identify short term and intermediate timelines for the objectives. This can hinder beneficiaries from tracking the status of implementation. In the absence of an implementation strategy for the APP/FSNS and credible monitoring data independent of the ministerial implementing bodies, all the programmes put up for implementation are substantially subjected to political factors, and the

[358] See Federal Ministry of Agriculture and Rural Development website (04 April 2020), online: <fmard.gov.ng/covid-19-nigeria-fg-articulates-logistic-for-release-of-70000-metric-tonnes-of-grains/>.
[359] See PricewaterhouseCoopers, "Responding to the Impacts of COVID-19 on Food Security and Agriculture in Nigeria" (June 2020), online (pdf): <www.pwc.com/ng/en/assets/pdf/impact-covid19-food-security-nigeria.pdf> accessed 20 November 2020.
[360] See Federal Ministry of Health, Nigeria Food and Nutrition Response Plan for COVID-19 Pandemic, April 2020.

individual or collective performance of the APP implementation cannot be properly ascertained.[361]

Although the APP and FSNS indicate the government's objective to increase agricultural investments for target smallholder farmers, with particular attention to women, such actions do not automatically benefit women. A multisectoral approach is very important to eliminate all aspects of gender inequality that increase women's risk for food insecurity. Improving access to land and finance as indicated in the APP and FSNS are not sufficient to address the broad range of inequalities faced by women in relation to their food security. The policies only give broad objectives and fail to provide targeted actions to achieve this. If policies fail to account for individual rights over household assets and do not seek to change intra-household distribution of benefits, it will likely reinforce patriarchal social norms[362] and exacerbate food insecurity for women living in such households. The questions of whether women control resources, participate in decisions about household income, meet their needs and achieve their aspirations are all crucial to achieving food security across board.[363] This will only happen if development policies transform women's smallholder farming, education, and dismantles structural and social inequities against women.[364]

The Nigerian government should strengthen women's access to justice for societal systemic inequities and household gender discriminations.[365] Because gender inequality in agriculture remains critical, women farmers are particularly at risk of hunger, especially when crisis strikes or during their reproductive years when they are more prone to macro and micro-nutrient deficiencies. The United Nations Entity for Gender Equality and the Empowerment of Women

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[361] *Supra* note 359.
[362] See generally, UN Women, "The World Survey on the Role of Women in Development 2014: Gender Equality and Sustainable Development" (2014), online (pdf): <www.unwomen.org/-/media/headquarters/attachments/sections/library/publications/2014/world-survey-on-the-role-of-women-in-development-2014-en.pdf?la=en&vs=3045> at 58, accessed 11 September 2020.
[363] See Oxfam, "Gender Inequalities and Food Insecurity, Ten Years After the Food Crisis, Why are Women Farmers Still Food-Insecure" (2019), online (pdf): <oxfamilibrary.openrepository.com/bitstream/handle/10546/620841/bp-gender-inequalities-food-insecurity-150719-en.pdf;jsessionid=3A22A49AAA052B5D31EDFFE614149020?sequence=1> accessed 11 September 2020.
[364] *Ibid.*
[365] The government also has an obligation under the CEDAW to respect, protect and fulfil the right of women to food. Nigeria ratified the CEDAW and its Optional Protocol in 1985 and 2004 respectively.

(UN Women) affirm that "sustainable food security cannot be achieved without the agency and decision-making of women in the food system and without recognizing and overcoming the constraints that they face as producers and consumers".[366] The government should embark on gender mainstreaming in its food and agriculture governance and eliminate structural and cultural barriers that prevent women and other vulnerable groups from living to their fullest potential.

In sum, the principles and specific measures discussed above in realising the right to food through adaptation and mitigation provide guidance in adopting effective practices, policies and frameworks that will ensure the right to food while addressing the impacts of climate change and COVID-19 on food security in Nigeria.

## 5. Conclusion

Today, society finds itself at the crossroad of multiple upheavals, the COVID-19 global pandemic emergency with thousands dying every day and a major economic downturn. Meanwhile, the thread of the climate crisis looms more than ever. In spite of considerable progress to achieve the zero hunger sustainable development goal, over 800 million people are chronically undernourished.[367] Climate change is severely impacting food systems and heightening the food crisis. This situation is further complicated by the COVID-19 pandemic that necessitated States to undergo drastic measures that have affected the access to, flow, production, and distribution of food. In Nigeria, rising food prices is already a severe challenge, food inflation rose to 15% as at April 2020.[368]

Like the climate crisis, the pandemic illustrates that no individual – regardless of status – or country is immune to disasters or occurrences that can affect their health and livelihood. Nevertheless, the COVID-19 crisis has cast more light on countries' legal and structural inadequacies. They both amplify existing inequalities and emphasise the need to pay utmost

[366] *Supra* note 362.
[367] *Supra* note 7.
[368] *Supra* note 359.

attention to the circumstances and peculiarities of the most vulnerable as they suffer disproportionate impacts from climate change and the pandemic effects. The unequivocal promise of all UN Member States to leave no one behind in realising sustainable development and addressing global challenges not only entails reaching the poor, but also requires combating discrimination and rising inequalities within and among countries, and their root causes.[369] These crises apparently reveal the need to eliminate persistent forms of discrimination that leaves individuals, families and communities marginalised, excluded and further behind. This can only be done with the instrumentality of human rights, which recognises the inherent dignity of every person and reinforces equal and non-discriminatory practices. As the UN notes, many of the barriers that people encounter in accessing services, resources and equal opportunities are not simply by chance or a lack of availability, but rather the result of discriminatory laws, policies and social practices that leave particular groups of people behind and impede development progress.[370] Leaving no one behind entails that individuals are constantly placed at the center of all efforts to address global problems, and will, no doubt, facilitate the realisation of the agenda for sustainable development.

Addressing the systemic shortcomings revealed by abrupt disruptions in the wake of the pandemic will prepare States and inform actions in solving other global challenges. Whilst climate change presents long-term planning and adaptation, the COVID-19 pandemic produces unforeseen challenges with little or no time for States to deal with its attendant shocks. The situation, therefore, calls for urgent measures, particularly in eliminating systems and structures that perpetuate inequities. In order to achieve this, the availability of adequate resources is paramount. The obligation of States to achieve the full realisation of economic, social and cultural rights to the maximum of its available resources underscores the importance of resources in realising certain rights. Unavailability of financial and technical resources poses a limitation in addressing global challenges like the climate and COVID-19 crises. However, as noted in the body of this thesis, this obligation requires States to work individually and through international assistance and cooperation, especially considering differentiated capacities.

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[369] United Nations, Universal Values Principle Two: Leave No One Behind, online: *United Nations Sustainable Development Group* <unsdg.un.org/2030-agenda/universal-values/leave-no-one-behind> accessed 14 December 2020.
[370] *Ibid.*

In view of the above, this thesis highlighted key factors and measures essential for ensuring the right to food and examined how well Nigeria's legal and policy framework responds to these problems. Five years into the sustainable development goals, and only a decade left to go, the global community and States should re-examine their efforts thus far. In light of the increasingly changing climate, increased conflicts, and the COVID-19 crisis, targeted and strategic measures are needed to address these issues. The food economy will suffer more as the crises continue if adequate legal and policy frameworks are not set up to guide the government's action to ensure food security in Nigeria. This thesis highlighted shortcomings in the country's current legal and policy framework and the need for the inclusion of measurable metrics, explicit recognition of the right to food, strengthening institutions and empowering vulnerable groups in order to ensure the realisation of the right to food. Having discussed specific measures for States to adopt in addition to implications of the human rights principles of transparency, participation and inclusion, vulnerability and empowerment, good governance and accountability, and international cooperation and assistance in the context of the climate and health crises, these human rights-based measures can inform better policy processes and outcomes that guarantee the right to food in Nigeria.

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