

## ARTICLES

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ISSN 0041-9915 (print) 1942-8405 (online) • DOI 10.5195/lawreview.2020.717  
<http://lawreview.law.pitt.edu>



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## COMPARATIVE INTERNATIONAL LITIGATION AND CLIMATE CHANGE: A CASE STUDY ON ACCESS TO JUSTICE IN ADAPTATION MATTERS

Esmeralda Colombo and Anastasia Giadrossi\*

### ABSTRACT

For the first time in the international climate regime, the Paris Agreement acknowledges the interconnection of climate action and human rights. In the aftermath of the 2019 Intergovernmental Panel on Climate Change (“IPCC”) “Special Report on Climate Change and Land,” the rights to food and to an adequate standard of living appear increasingly imperiled. Thus, the aim of this Article is to investigate how access to justice mechanisms in climate change matters help blueprint measures supporting the livelihood of smallholder farmers. Through comparative international litigation, we analyze the untapped potential of indirectly

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applying international law in national courts, a process that has occurred in only six decisions worldwide, none of which concerned climate-smart agriculture. Having selected a program of climate-smart agriculture, we turn to litigation strategies for smallholder farmers to access such a program. By supporting climate-smart agriculture measures, plaintiffs can bolster both access to justice and the much-needed decentralized enforcement of international law.

## I. SETTING THE SCENE

### A. Introduction

Abundant data show that climate change has alarming implications for agriculture and food production.<sup>1</sup> Climate variability and extremes are responsible for ecosystem degradation, increased erosion and salinization of the soil, deforestation, and biodiversity loss.<sup>2</sup> These factors jeopardize each and every dimension of food security and nutrition including food availability, access, utilization, and stability.<sup>3</sup> The 2018 Intergovernmental Panel on Climate Change (“IPCC”) special report on the impacts of global warming of 1.5°C above pre-industrial levels reveals with high confidence that an increase of 1.5°C above pre-industrial levels will adversely affect communities dependent on agriculture or coastal livelihoods, particularly the least developed countries, and result in smaller net reductions in yields of maize, rice, wheat and potentially other cereal crops, further exacerbating poverty in certain regions. The 2019 IPCC “Special Report on Climate Change and Land” concludes with high confidence that higher demand for food, feed, and water—unmatched by technological improvements in agriculture yields—result in higher risks of water scarcity in drylands, land degradation, and food insecurity.<sup>4</sup> This situation calls for urgent action to be undertaken both in terms

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<sup>1</sup> See, e.g., FOOD & AGRIC. ORG. OF THE UNITED NATIONS, THE STATE OF FOOD SECURITY AND NUTRITION IN THE WORLD: BUILDING CLIMATE RESILIENCE FOR SECURITY AND NUTRITION (2018), <http://www.fao.org/3/i9553en/i9553en.pdf> [hereinafter FOOD SECURITY AND NUTRITION].

<sup>2</sup> *Id.* at 80.

<sup>3</sup> *Id.* at xiv.

<sup>4</sup> VALERIE MASSON-DELMOTTE ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS 9–10 (2018), [https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15\\_SPM\\_version\\_report\\_LR.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/05/SR15_SPM_version_report_LR.pdf). See generally ALMUT ARNETH ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE AND LAND (2019), [https://www.ipcc.ch/site/assets/uploads/2019/08/4.-SPM\\_Approved\\_Microsite\\_FINAL.pdf](https://www.ipcc.ch/site/assets/uploads/2019/08/4.-SPM_Approved_Microsite_FINAL.pdf) (detailing broadly global challenges resulting from climate change).

of mitigating greenhouse gas (“GHG”) emissions—whose expected 2050 levels are also likely to make crops less nutritious<sup>5</sup>—and implementing adaptation measures.

Asia, home to the majority of the world’s poor, is particularly vulnerable to the adverse effects of climate change. With India’s population reaching 1,351,000,000<sup>6</sup> and expected to outstrip China in 2022, the situation is alarming, especially since CO<sub>2</sub> emissions from energy in India are predicted to double by 2030.<sup>7</sup> The Food and Agriculture Organization of the United Nations (“FAO”) reports that in rural India longer periods of hot temperature during the agricultural season are leading to lower crop yields.<sup>8</sup> Moreover, in some areas the increased salinity of the soil is seriously affecting crop cycles and production, particularly rice.<sup>9</sup> The adverse effects of climate change are especially detrimental in areas dominated by small-scale family farmers, whose production losses pose a risk to their livelihoods, food security, and nutrition.<sup>10</sup> From a gender perspective, data from India shows that exposure to climate change disasters, generally in the form of floods, has much worse effects on girls than boys.<sup>11</sup> This has serious consequences in terms of gender equality in nutrition, as male children are often prioritized for both food distribution and healthcare access.<sup>12</sup>

In the Indian Ocean, the Andaman and Nicobar Islands are experiencing severe agricultural productivity losses—rice in particular, which constitutes the main staple

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<sup>5</sup> Nicola Davis, *Climate Change Will Make Hundreds of Millions More People Nutrient Deficient*, THE GUARDIAN (Aug. 27, 2018), <https://www.theguardian.com/science/2018/aug/27/climate-change-will-make-hundreds-of-millions-more-people-nutrient-deficient>.

<sup>6</sup> *Total Population of India 2024*, STATISTA (Nov. 6, 2019), <https://www.statista.com/statistics/263766/total-population-of-india/>.

<sup>7</sup> Agnieszka de Sousa et al., *What Will the World Eat in the Next Decade?*, BLOOMBERG (Aug. 22, 2018), <https://www.bloomberg.com/graphics/2018-food-outlook/>. CO<sub>2</sub> emissions projections are compared with 2012 levels. See Navroz K. Dubash et al., *India’s Energy and Emissions Future: An Interpretive Analysis of Model Scenarios*, 13 ENVTL. RES. LETTERS 1, 9 (2018).

<sup>8</sup> See FOOD SECURITY AND NUTRITION, *supra* note 1, at 63.

<sup>9</sup> Bandla Gangaiah et al., *Bringing Climatic Resilience to Farming Systems of Andaman & Nicobar Islands*, in INTEGRATED FARMING SYSTEMS FOR TROPICAL ISLANDS OF INDIA 174, 179 (Bandla Gangaiah & Sibnarayan Dam Roy eds., 2016).

<sup>10</sup> FOOD SECURITY AND NUTRITION, *supra* note 1, at 64.

<sup>11</sup> *Id.* at 92.

<sup>12</sup> *Id.*

of the population and its most important crop.<sup>13</sup> Such productivity losses are due in part to the salinity of the soil induced by climate change.<sup>14</sup> A program implemented by the Central Island Agricultural Research Institute (“CIARI”) has shown the beneficial effects of tackling the salinity problem through the use of salt-resistant seeds.<sup>15</sup> This program has the potential to benefit other farmers by increasing the overall productivity of the islands. However, its successful and fruitful implementation in other geographical locations is dependent on governmental action and support. One of the most significant results that the program could attain is to protect the access to food and ensure adequate standards of living of the Islands’ communities in a progressive, long-term manner. The present Article aims to shed light on how climate change litigation based on international law could be a possible avenue to trigger climate-smart agriculture measures of the type identified in the above-mentioned program in order to advance adaptation responses and implement mitigation co-benefits. Indeed, climate change litigation has proved to be an effective tool to boost climate change policy efforts when and where governments fall short. Currently, climate change litigation is growing rapidly, with roughly 1,328 lawsuits in thirty-two jurisdictions,<sup>16</sup> six of which were explicitly grounded in international law.<sup>17</sup> To date, none of these cases have been brought with the aim of precipitating innovative technology or a program of climate-smart agriculture. To this extent, the present Article will add to the current literature exploring new pathways for climate change litigation.

At present, climate change litigation based on international law has mainly relied on the provisions of the United Nations Framework Convention on Climate Change, the Kyoto Protocol, or principles of international law to interpret national law and hold governments accountable when they lack adequate tools for mitigation and adaptation.<sup>18</sup> Although courts have only started applying the Paris Agreement, this Article argues that it represents a fertile ground for adaptation-based litigation due

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<sup>13</sup> NARESH KUMAR BAINSLA ET AL., A SOCIAL INTERFACE FOR RICE PRODUCTION IN ANDAMAN AND NICOBAR ISLANDS (2014); *see also* Gangaiah et al., *supra* note 9, at 175.

<sup>14</sup> BAINSLA ET AL., *supra* note 13.

<sup>15</sup> P.K. SINGH ET AL., FARMERS’ PARTICIPATORY SEED PRODUCTION AND ADOPTION OF RICE VARIETIES IN ANDAMAN & NICOBAR ISLANDS—A SUCCESS STORY (2014), [https://www.researchgate.net/publication/291339300\\_Farmer%27s\\_participatory\\_seed\\_production\\_adoption\\_of\\_rice\\_varieties\\_in\\_A\\_N\\_Islands](https://www.researchgate.net/publication/291339300_Farmer%27s_participatory_seed_production_adoption_of_rice_varieties_in_A_N_Islands).

<sup>16</sup> JOANA SETZER & REBECCA BYRNES, GLOBAL TRENDS IN CLIMATE CHANGE LITIGATION: 2019 SNAPSHOT 3 (2019). The total number includes international regional and national cases.

<sup>17</sup> *See infra* Part II.A.

<sup>18</sup> *See infra* Part II.B.

to the Agreement's definition of human rights in its Preamble. This definition entails that states must ensure that appropriate adaptation measures are taken to protect and fulfill human rights, including the right to food and adequate standards of living enshrined in the human rights instruments they have ratified.

### B. Methodology

Our research adopts a comparative approach, scrutinizing sources of international climate change law and human rights instruments as previously applied by national courts within various jurisdictions.<sup>19</sup> In particular, the investigation looks at climate change litigation cases in Australia, Colombia, India, Pakistan, the Netherlands, and the United States. The purpose is to show that, where states fail to carry out adequate adaptive measures to safeguard the rights to food and adequate standards of living, individuals and non-governmental organizations ("NGOs") are in a position to invoke international law to increase their odds of successfully accessing justice. Hence, states may be held accountable in domestic courts due to an indirect application of international law and ordered to adopt adequate measures to combat climate change.

The present Article is premised on a number of assumptions and limitations. We focus on the role of international law in facilitating access to justice through legal actions brought solely against states, concentrating exclusively on adaptation matters. Moreover, the legal actions under examination are those brought by individuals and NGOs. In light of this limitation, we will not focus on international obligations between countries, such as duties of cooperation. Further, since the analysis of all available legal grounds under international conventions and instruments would require a separate and extensive analysis, the scope of this Article is limited to a restricted number of legal instruments. Finally, we acknowledge that litigation is not the only answer to the lack of adequate climate change efforts. However, an analysis of approaches outside of the legal field would go beyond the purpose of this Article.

Certain terms that appear in the Article should be clarified. Our use of "resilience" in Part II implies three indicators: socio-economic access to food, the biophysical capacity to produce food more intensively or extensively, as well as the

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<sup>19</sup> By comparative, we herein refer to comparative international law. See Anthea Roberts, *Comparative International Law? The Role of the National Courts in Creating and Enforcing International Law*, 60 INT'L & COMP. L.Q. 57 (2011). For comparative law as a comparative approach, see KONRAD ZWIEGERT & HEIN KÖTZ, AN INTRODUCTION TO COMPARATIVE LAW (Tony Weir trans., Oxford Univ. Press 3d ed. 1998) (1977).

magnitude and diversity of current domestic food production.<sup>20</sup> With regard to our case study in Part III, “resilience” refers only to the biophysical capacity to intensify or increase food production. When denoting “climate-smart agriculture,” we mean an approach that aims to achieve food security in the context of a changing climate.<sup>21</sup> This approach seeks to enhance productivity in a sustainable manner, support farming communities in their adaptation to climate change by building resilience, and, where possible, deliver co-benefits of reduced GHG emissions.<sup>22</sup> Climate resilient technologies—such as early warning systems, climate insurance, crop diversification, and new crop varieties—provide key entry points for climate-smart agriculture and contribute to the realization of the rights to food and adequate standard of living.<sup>23</sup> For instance, our case study casts light on the development of new crop varieties.

The Article will proceed as follows. In the subsequent section (Part II) we examine how and which international norms could facilitate access to justice in climate change matters to precipitate climate-smart agriculture measures at a national level and protect and ensure the right to food and adequate standards of living. The third section (Part III) illustrates the program led by CIARI on India’s Nicobar and Andaman Islands, presented as an excellent example of the implementation of an adaptive measure: the introduction of resilient rice seeds to tackle the soil salinity caused by climate change. We further study its beneficial effects in terms of increased rice production. Finally, in the fourth section (Part IV) we showcase a hypothetical domestic climate change case brought by small landholders of the Andaman and Nicobar Islands against India’s governmental authorities based on the international norms identified in Part I.

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<sup>20</sup> David Seekell et al., *Resilience in the Global Food System*, 12 ENVTL. RES. LETTERS 1, 2 (2017).

<sup>21</sup> See JANIE RIOUX ET AL., FOOD & AGRIC. ORG. OF THE UNITED NATIONS, PLANNING, IMPLEMENTING AND EVALUATING CLIMATE-SMART AGRICULTURE IN SMALLHOLDER FARMING SYSTEMS, at xi (2016), <http://www.fao.org/3/a-i5805e.pdf>.

<sup>22</sup> *Id.* (highlighting how crop production can provide an opportunity to mitigate climate change in two ways: by storing carbon and by reducing GHG emissions).

<sup>23</sup> Rebecca Clements et al., *Technologies for Climate Change Adaptation—Agriculture Sector*, in TECH. NEEDS ASSESSMENT GUIDEBOOK SERIES 54, 105–06, 108 (Xianli Zhu ed., 2011), [https://orbit.dtu.dk/files/5706575/Technologies\\_for\\_Climate\\_Change\\_Adaptation\\_Agriculture\\_sector.pdf](https://orbit.dtu.dk/files/5706575/Technologies_for_Climate_Change_Adaptation_Agriculture_sector.pdf).

## II. ACCESS TO JUSTICE IN A CHANGING CLIMATE

### A. *The Consistent Interpretation of National Law with International Obligations*

The role and responsibilities of states in formulating adequate climate change policies has been stressed in various fora and, recently, within national courtrooms. In the absence of a provision explicitly enshrining access to justice through the international climate change regime, individuals and NGOs are increasingly dragging states before domestic courts to respond of the perceived failure to effectively address the impacts of climate change. Plaintiffs are grounding their arguments in national legislation and, more recently, international law, in particular the principles of international environmental law as well as customary international law and treaty provisions.<sup>24</sup> This new type of litigation is characterized by its recourse to an interpretive technique that has long been applied by national judicial bodies: the indirect application of international law in domestic courts—also known as the consistent interpretation of national law according to international obligations, or the presumption principle.<sup>25</sup> By invoking international law in a national context, plaintiffs are in a position to strengthen their access to domestic courts and effective remedies—the procedural and substantive prongs of citizens’ access to justice, respectively.<sup>26</sup>

The practice of indirectly applying international law in climate change matters emerged only in 2015, when the District Court of The Hague decided the landmark *Urgenda* case.<sup>27</sup> The opinion voiced by some authors is that *Urgenda* set a precedent

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<sup>24</sup> Esmeralda Colombo, *The Quest for Cosmopolitan Justice in Climate Matters*, 2 NORDIC ENVTL. L.J. 25, 27 (2017).

<sup>25</sup> *Id.*; see, e.g., ANDRÉ NOLLKAEMPER, NATIONAL COURTS AND THE INTERNATIONAL RULE OF LAW 139 (2011) (highlighting an indirect application of international law in national courts).

<sup>26</sup> For the two different levels, see, e.g., Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters art. 9(1)–(4), June 25, 1998, 2161 U.N.T.S. 447 (specifically, Article 9(1)–(3) discuss access to review and administrative and judicial procedures, and Article 9(4) discusses access to effective remedies); European Convention on Human Rights arts. 6, 13, Apr. 11, 1950, 213 U.N.T.S. 221. So far, the role of international law can be framed as the one of facilitator, or enhancer, of access to justice. There appears to be no case where access to justice was lessened by the indirect application of international law.

<sup>27</sup> ROGER COX, CTR. FOR INT’L GOVERNANCE INNOVATION, A CLIMATE CHANGE LITIGATION PRECEDENT: URGENDA FOUNDATION V THE STATE OF THE NETHERLANDS 1 (2015).



for future climate change litigation in other jurisdictions.<sup>28</sup> In the meantime, five decisions adjudicating climate change matters have followed.<sup>29</sup> While it is not possible to speculate on the reasoning behind such turning point, one consideration should be clear: These decisions shall not be taken for granted. In fact, international law fails to mandate courts to apply domestic law in light of international law.<sup>30</sup> What is noticeable is that, irrespective of the existence of an international obligation in this sense, national courts have indirectly applied international law.<sup>31</sup> This can be described as the justiciability through national means of Principle 10 of the Rio Declaration.<sup>32</sup> In fact, Principle 10 encases all three environmental procedural rights: the right to information, participation in decision-making, and access to justice. It is access to justice that international law appears to facilitate in national climate change cases. Furthermore, one must not overlook the fact that, by indirectly applying international law, national courts also contribute to its enforcement.<sup>33</sup> In light of this premise, we now turn to the international legal norms that can constitute the basis for a hypothetical case on climate-smart agriculture.

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<sup>28</sup> *Id.* at 13; see also Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

<sup>29</sup> Leghari v. Pak., (2015) W.P. No. 25501/2015 (Lahore High Ct.) (Pak.) (applying international environmental law principles); *Earthlife Afr. Johannesburg v. Minister of Env'tl. Affairs* 2017 (1) SA 1 (GNP) (S. Afr.); *Juliana v. United States*, 217 F. Supp. 3d 1224 (D. Or. 2017); Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: L. Villabona, Radicacion No. 11001-22-03-000-2018-00319-00, Gaceta Judicial [G.J.] (Colom.); *Gloucester Res. Ltd. v Minister for Planning* [2019] NSWLEC 7 (Austl.).

<sup>30</sup> The principle of the supremacy of international law does not make international law supreme at the national level, and it does not generally apply within the indirect application of international law in domestic courts. See André Nollkaemper, *Rethinking the Supremacy of International Law* 65–68 (2009) (unpublished working paper) (on file with the Amsterdam Center for International Law); see also NOLLKAEMPER, *supra* note 25, at 163.

<sup>31</sup> On non-climate change matters, see, e.g., Gerrit Betlem & André Nollkaemper, *Giving Effect to Public International Law and European Community Law Before Domestic Courts. A Comparative Analysis of the Practice of Consistent Interpretation*, 14 EUR. J. INT'L L. 569, 574 (2003).

<sup>32</sup> U.N. Conference on Environment and Development, *Rio Declaration on Environment and Development*, U.N. Doc. A/CONF.151/26 (Vol. I), princ. 10 (Aug. 12, 1992) [hereinafter *Rio Declaration*].

<sup>33</sup> See, e.g., GEORGES SCELLE, *PRÉCIS DE DROIT DES GENS: PRINCIPES ET AYSTÉMATIQUE—PT.2*, at 10–12 (1934); Catherine Redgwell, *Access to Environmental Justice, in ACCESS TO JUSTICE AS A HUMAN RIGHT* 165 (Francesco Francioni ed., 2007).

## B. Access to Justice through International Legal Norms

### 1. Introduction

This section provides an overview of which international legal norms could be invoked in national courts in order to drive climate-smart agricultural programs through rights-based litigation.<sup>34</sup> This type of legal basis can contribute to and expand protections regarding the right to food and adequate standards of living, rights greatly impacted by climate change.

The rights to food and adequate standards of living are recognized in Article 11 of the International Covenant on Social, Economic and Cultural Rights (“ICESCR”).<sup>35</sup> The right to food is defined as the right of every man, woman and child to have regular, permanent, and unrestricted access to food, either directly or through financial means.<sup>36</sup> On the other hand, the right to an adequate standard of living encompasses a number of entitlements, including the right to adequate housing, adequate food, and safe and clean drinking water and sanitation.<sup>37</sup> The right to food is therefore a component of the right to an adequate standard of living<sup>38</sup> and thus contributes to its fulfillment. There is no longer any doubt that violations of the right to food and an adequate standard of living may be invoked in front of courts, as affirmed by a report of FAO that sheds light on the interconnectedness of the right to food and access to justice at the national, regional, and international levels.<sup>39</sup> What remains to be assessed—and what is the focus of this section—is the extent to which the justiciability of the right to food and adequate standards of living may also precipitate adaptation measures to tackle impacts of climate change.

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<sup>34</sup> Marc A. R. Zemel, *The Rise of Rights-Based Climate Litigation and Germany’s Susceptibility to Suit*, 29 FORDHAM ENVTL. L. REV. 484, 486–49 (2018).

<sup>35</sup> G.A. Res. 2200A (XXI), International Covenant on Economic, Social and Cultural Rights (Dec. 16, 1966) [hereinafter ICESCR].

<sup>36</sup> Comm. on Econ., Soc. & Cultural Rights, Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social and Cultural Rights: General Comment No. 12, The Right to Adequate Food (art. 11), U.N. Doc. E/C.12/1999/5, ¶ 6 (1999) [hereinafter The Right to Adequate Food].

<sup>37</sup> ICESCR, *supra* note 35, at art. 11(1).

<sup>38</sup> U.N. HIGH COMMISSIONER FOR HUM. RTS., THE RIGHT TO ADEQUATE FOOD: FACTSHEET NO. 34, at 7, (2010), <http://www.fao.org/3/b358e/b358e.pdf> [hereinafter U.N.H.R. FACTSHEET NO. 34].

<sup>39</sup> CHRISTOPHE GOLAY, FOOD & AGRIC. ORG. OF THE UNITED NATIONS, THE RIGHT TO FOOD AND ACCESS TO JUSTICE: EXAMPLES AT THE NATIONAL, REGIONAL AND INTERNATIONAL LEVELS (2009), <http://www.fao.org/3/a-k7286e.pdf>.

In order to investigate these queries, we first assess whether adaptation commitments within the “climate change regime” may serve as a legal benchmark to flesh out the duties of states under national law to develop measures for climate-smart agriculture.<sup>40</sup> Second, we review the obligations enshrined in selected instruments belonging to the *human rights framework*. Finally, we scrutinize whether the established *principles of international law* may provide additional legal grounds to advance climate-smart measures.

## 2. The International Climate Change Regime

### a. Introduction

We restrain the scope of our inquiry into the *climate change regime* to encompass only the United Nations Framework Convention on Climate Change (“UNFCCC”),<sup>41</sup> the Kyoto Protocol (“KP”),<sup>42</sup> and the recently adopted Paris Agreement (“PA”).<sup>43</sup> Notwithstanding their importance, we do not include the decisions of the relevant Conference of the Parties (“COP”), which have not reached levels of recognition in judicial settings as much as other Conference of the Parties’ decisions.<sup>44</sup>

### b. United Nations Framework Convention on Climate Change

Mitigation is certainly more prominent than adaptation within the UNFCCC. The main objective of the Convention, as laid down in Article 2, is the mitigation of

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<sup>40</sup> Mitigation and adaptation are two strategies of coping with global warming. Mitigation deals with the causes of climate change and aims at reducing anthropogenic climate effects through emissions abatement or enhancement of carbon sinks. See DANIEL BODANSKY ET AL., *INTERNATIONAL CLIMATE CHANGE LAW* 12 (2017). Conversely, adaptation intervenes with regard to the effects of climate change, and the “efforts to moderate, cope with, and prepare for the current and anticipated impacts of climate change on human and natural systems.” See Michael B. Gerrard, *Introduction* to *THE LAW OF ADAPTATION TO CLIMATE CHANGE: U.S. AND INTERNATIONAL ASPECTS* 3 (Michael B. Gerrard & Katrina Fischer Kuh eds., 2012).

<sup>41</sup> United Nations Framework Convention on Climate Change, May 9, 1992, 1771 U.N.T.S. 107 [hereinafter UNFCCC].

<sup>42</sup> Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, 2303 U.N.T.S. 148 [hereinafter Kyoto Protocol].

<sup>43</sup> U.N. Framework Convention on Climate Change Conference of Parties, Paris Agreement on Climate Change, Dec. 12, 2015, U.N. Doc. FCCC/CP/2015/L.9/Rev.1 [hereinafter Paris Agreement].

<sup>44</sup> See *Kaliña and Lokono Peoples v. Suriname, Merits, Reparations, and Costs*, Judgment, Inter-Am. Ct. H.R. (ser. C) No. 309, ¶ 174 (Nov. 25, 2015) (illustrating how the Inter-American Court of Human Rights characterizes Convention on Biological Diversity consensus decisions as interpretive of the international human rights law in issue).

climate change effects “to achieve stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system” rather than adaptation.<sup>45</sup> The adaptive capacity of the natural environment—mentioned in the second paragraph of Article 2—is conceived more as an indicator for determining the extent to which anthropogenic emissions have been reduced.<sup>46</sup> Interestingly, the objective highlights the potential risk for food security by stating that the level of emissions would have to be reduced in a manner “to ensure that food production is not threatened.”<sup>47</sup> Nestled under one of its objectives, food security thus appears as a priority of the UNFCCC. Achieving food security entails ensuring physical, social, and economic access to sufficient, safe, and nutritious food in order to meet individuals’ dietary needs at all times.<sup>48</sup> This is particularly important in rural areas, where agricultural workers and small landholders are most vulnerable to food insecurity.<sup>49</sup> Measures to ensure access to sufficient provisions would thus contribute to guaranteeing agricultural workers’ and small landholders’ right to food and an adequate standard of living, given the strong interdependence between these two rights.<sup>50</sup>

Although food security is not featured in any subsequent article of the UNFCCC, adaptation is mentioned in several provisions, including those regarding agriculture. In imperative terms, Article 4(1)(b) requires all parties to adopt measures to “[f]ormulate, implement . . . programmes containing measures to . . . facilitate adequate adaptation to climate change.”<sup>51</sup> Pursuant to Article 4(1)(e), parties “shall . . . develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture.”<sup>52</sup>

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<sup>45</sup> See BODANSKY ET AL., *supra* note 40, at 500.

<sup>46</sup> Lisa Schipper, *Conceptual History of Adaptation in the UNFCCC Process*, 15 REV. EUR. COMMUNITY & INT’L ENVTL. L. 1, 82 (2006).

<sup>47</sup> UNFCCC, *supra* note 41, at art. 2.

<sup>48</sup> *Chapter 2. Food Security: Concepts and Measurement*, FOOD & AGRIC. ORG. OF THE UNITED NATIONS, <http://www.fao.org/docrep/005/y4671e/y4671e06.htm#fn31> (last visited Feb. 17, 2019).

<sup>49</sup> BEN SAUL ET AL., *THE INTERNATIONAL COVENANT ON ECONOMIC, SOCIAL AND CULTURAL RIGHTS. COMMENTARY, CASES AND MATERIALS* 877 (2014).

<sup>50</sup> See *infra* Part II.3.

<sup>51</sup> UNFCCC, *supra* note 41, at art. 4(1).

<sup>52</sup> *Id.* art. 4(1)(e).

The use of the verb “shall” in Article 4 is significant: it creates a legal obligation for all parties to develop adaptation policies in relation to agriculture. At the same time, the UNFCCC grants states wide discretion in terms of the implementation of measures to address climate change both for mitigation and adaptation. This is partly due to the nature of the UNFCCC. Due to the nature of the UNFCCC as a framework convention, its scope is not to provide a fully-fledged and detailed regulatory regime, but rather to set forth the groundwork for reaching decisions and passing regulations with a higher degree of detail.<sup>53</sup> Moreover, some discretion derives from the premise of the provisions on states’ “common but differentiated responsibilities,” as well as on “their specific national and regional development priorities, objectives and circumstances,” spelled out in the chapeau of Article 4.<sup>54</sup> No further reference is made to adaptation measures with regard to the agricultural sector, the focus of this Article. Notwithstanding, the UNFCCC requires states to “[p]romote and cooperate in the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases . . . in all relevant sectors, including . . . agriculture.”<sup>55</sup>

Finally, Article 3(3)’s precautionary principle makes a general reference to adaptation, which demands that states anticipate and prevent environmental damage through cost-effective measures that “take into account different socio-economic contexts” and are “comprehensive.”<sup>56</sup> Cost-effectiveness is certainly an aspect that should be carefully considered by states, which may undertake proactive measures rather than be caught by surprise and forced to bear the expense of extensive climate change damages alongside their ghastly effects on the population. The court in *Urgenda* also stressed concerns of cost-effectiveness, stating that the government’s delay in taking adequate measures may have led to greater future costs to meet the predetermined emission targets.<sup>57</sup>

The recent trend in climate change litigation has showcased a fairly recurrent application of the UNFCCC. In most cases, courts have invoked the UNFCCC in

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<sup>53</sup> PATRICIA BIRNIE ET AL., *INTERNATIONAL LAW AND THE ENVIRONMENT* 357 (3d ed. 2009).

<sup>54</sup> UNFCCC, *supra* note 41, at art. 4.

<sup>55</sup> *Id.* art. 4(1)(c).

<sup>56</sup> *Id.* art. 3(3). Regarding the need to take into consideration cost-effectiveness, see CHRISTINA VOIGT, *SUSTAINABLE DEVELOPMENT AS A PRINCIPLE OF INTERNATIONAL LAW: RESOLVING CONFLICTS BETWEEN CLIMATE MEASURES AND WTO LAW* 64 (2009).

<sup>57</sup> Hof’s-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

order to outline the insufficient efforts of states with regards to mitigation. In *Urgenda*, for example, the court primarily relied on the principles enshrined in the UNFCCC to establish that under national tort law the Dutch government had a duty towards its citizens to increase its efforts to reduce GHG emissions.<sup>58</sup> Moreover, in *Earthlife*<sup>59</sup> the High Court of Pretoria ruled that South Africa's governmental bodies should not have granted a permit for the development of a coal-fired power plant before ensuring that its climate change-related impacts had been taken into account. The court outlawed the permit through its interpretation of national law, namely the National Environmental Management Act, consistent with Article 3(3), which spells out the precautionary principle, and Article 4(1)(f) of the UNFCCC, which requests states to employ, as much as possible, methods such as impact assessments to minimize adverse effects on the environment.<sup>60</sup> Finally, *Gloucester Resources*, a very recent case brought in front of an Australian court, also applied the UNFCCC to deny the approval of a project involving the development of an open-cut coal mine.<sup>61</sup> The denial was grounded, inter alia, in Australia's commitments to tackle climate change as a party to the UNFCCC, which would be compromised by the approval of this project.<sup>62</sup> Interestingly, in ruling on the contribution of the project to global climate change emissions and its adverse impacts, the Australian judge referenced as precedent litigation cases from other domestic courts, including *Urgenda*.<sup>63</sup>

One of the most relevant climate cases to date that was based on international legal norms and explicitly focused on adaptation was *Leghari*.<sup>64</sup> The court, however, did not refer to the UNFCCC's adaptation commitments in order to establish the failure of the government of Pakistan to implement existing regulations on climate change matters. The "Green Bench" of the Lahore High Court indirectly applied the UNFCCC, basing its decision on the international principles of environmental law, such as the principle of sustainable development, and the principle of precaution and

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<sup>58</sup> *Id.* ¶¶ 42–43.

<sup>59</sup> See generally *Earthlife Afr. Johannesburg v. Minister of Env'tl. Affairs* 2017 (1) SA 1 (GNP) (S. Afr.).

<sup>60</sup> *Id.* ¶ 83.

<sup>61</sup> *Gloucester Res. Ltd. v Minister for Planning* [2019] NSWLEC 7 (Austl.).

<sup>62</sup> *Id.* ¶ 440.

<sup>63</sup> *Id.* ¶ 521.

<sup>64</sup> *Leghari v. Pak.*, (2015) W.P. No. 25501/2015 (Lahore High Ct.) (Pak.).

equity mentioned in Article 3 of the Convention.<sup>65</sup> In a similar manner, adaptation challenges were addressed in *Future Generations*, a case concerning the deforestation of the Amazonian rainforest in Colombia.<sup>66</sup> Echoing *Leghari*, the Supreme Court of Colombia recalled the right to health (Article 12 ICESCR),<sup>67</sup> environmental protections during armed conflicts and hostilities (the Environmental Modification Convention and Protocol I additional to the 1949 Geneva Conventions, Articles 35(3) and 55),<sup>68</sup> the 1972 Stockholm Declaration (preambular paragraphs 8 and 9),<sup>69</sup> the Rio Declaration with regard to its sustainable development objective, the Rio Forest Principles, the Biodiversity Convention, the UNFCCC, and the Paris Agreement when making its decision.<sup>70</sup> By indirectly applying the no-harm principle, the precautionary principle, intergenerational equity, and the solidarity principle (which is reminiscent of the intragenerational equity principle),<sup>71</sup> the court bestowed legal personhood on the Colombian Amazon. Such recognition is meant to benefit the world's future.<sup>72</sup>

Conclusively, national courts have implicitly grounded adaptation measures in the UNFCCC, mainly by relying on the principles enshrined in Article 3, which will be analyzed later in the Article.<sup>73</sup> Nevertheless, we argue that, given its explicit and binding formulation, courts are also in a position to shape effective remedies on the basis of Article 4, for instance to precipitate climate-smart agriculture measures when states fall short.

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<sup>65</sup> *Id.* ¶ 7.

<sup>66</sup> Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: L.Villabona, Radicacion No. 11001-22-03-000-2018-00319-00, Gaceta Judicial [G.J.] (Colom.).

<sup>67</sup> ICESCR, *supra* note 35, at art. 12.

<sup>68</sup> Geneva Convention Relative to the Treatment of Prisoners of War arts. 35(3), 55, Aug. 12, 1949, 6 U.S.T. 3316, 75 U.N.T.S. 135.

<sup>69</sup> U.N. Conference on the Human Environment, *Declaration of the United Nations Conference on the Human Environment*, ¶¶ 8–9, U.N. Doc. A/CONF.48/14/Rev.1 (June 1972).

<sup>70</sup> Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: L.Villabona, No. 11001-22-03-000-2018-00319-00 (Colom.) (p. ¶¶ 22–25) (author's translation).

<sup>71</sup> *Id.* ¶¶ 11.1, 13.2–3.

<sup>72</sup> *Id.* ¶¶ 13.4–14.

<sup>73</sup> *See infra* Part II.B.4.

### c. Kyoto Protocol

The Kyoto Protocol (“KP”) does not establish new obligations with regard to adaptation. Nonetheless, while reiterating the commitments already established under the UNFCCC, the KP specifically refers to agriculture.<sup>74</sup> The main provision concerning adaptation, Article 10, stipulates that all parties shall “[f]ormulate, implement . . . and regularly update . . . programmes containing measures to facilitate adequate adaptation to climate change.”<sup>75</sup> The Article further clarifies that such programs should also concern agriculture.<sup>76</sup> The same provision shines a spotlight on adaptation technologies as key to improve adaptation to climate change.<sup>77</sup>

Similar to the previous discussion of the UNFCCC, the KP grants states a certain degree of discretion based on a qualified version of the principle of Common but Differentiated Responsibilities (“CBDR”). In particular, Article 10 subjects mitigation and adaptation measures to parties’ “common but differentiated responsibilities and their specific national and regional development priorities, objectives and circumstances.”<sup>78</sup> Despite the differentiation between developing and developed countries, the formulation of Article 10 is unambiguous enough to place a duty on states that are parties to the Protocol to undertake, as much as possible, efforts for the development of adequate national adaptation policies.

In the trajectory of climate change litigation, plaintiffs have brought lawsuits under the KP to push for the adoption of measures to limit GHGs and meet adequate emission targets. This was for example the case in *Urgenda*, where the KP and other sources of law were used to set a standard for the duty of care existing under national law.<sup>79</sup> Moreover, the court’s decision in *Earthlife* explicitly recalled South Africa’s obligations arising out of its position as a signatory to the KP.<sup>80</sup> Finally, the KP was also invoked in *Gloucester Resources* to stress Australia’s responsibility as a

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<sup>74</sup> Kyoto Protocol, *supra* note 42, at art. 10(b)(i)–(ii).

<sup>75</sup> *Id.* art. 10(b).

<sup>76</sup> *Id.* art. 10(b)(i).

<sup>77</sup> *Id.*

<sup>78</sup> *Id.* art. 10.

<sup>79</sup> Hof’s-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

<sup>80</sup> *Earthlife Afr. Johannesburg v. Minister of Envtl. Affairs* 2017 (1) SA 1 (GNP) at 14–15 para. 35 (S. Afr.).



developed country to take the lead in adopting measures to tackle climate change.<sup>81</sup> Interestingly, in none of these cases has the court applied a specific provision of the KP, but rather courts have favored a more general reference to the Protocol.

So far, the KP has not been used as a legal basis for adaptation-related lawsuits. Nonetheless, it is not unrealistic to posit that, similar to *Urgenda* and *Earthlife*, its provisions could be invoked in future adaptation-related suits vis-à-vis countries that ratified the Protocol's second commitment period, which is not yet in force.<sup>82</sup> Moreover, due to its specific reference to adaptation measures in the context of agriculture, the KP could be significant in the context of protecting the right to food and adequate standards of living as described in Part III. Be that as it may, the Paris Agreement may have superseded the KP's role in litigation and the expectations for its further application are therefore limited.

#### d. Paris Agreement

In the Paris Agreement ("PA"), the role of adaptation is significantly enhanced when compared to the UNFCCC and KP, as inferred by the significant number of provisions referring to it.<sup>83</sup> Previously, at a conference held in Cancun, states that are parties to the UNFCCC recognized that adaptation ought to be addressed with the same priority as mitigation, and enhanced action was required to build resilience in developing countries, which are disproportionately affected by climate change.<sup>84</sup> In light of this backdrop, the PA specifically includes in its objective the need to adapt to the adverse effects of climate change and foster resilience in a manner that "does not threaten food production" as part of the global response to climate change.<sup>85</sup> The explicit inclusion of adaptation in its objective—as opposed to the UNFCCC—has

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<sup>81</sup> *Gloucester Res. Ltd. v Minister for Planning* [2019] NSWLEC 7, ¶ 539 (Austl.).

<sup>82</sup> As of 18 February 2020, 137 countries have ratified the Kyoto Protocol's second commitment period, namely the Doha Amendment. *The Doha Amendment*, UNITED NATIONS CLIMATE CHANGE, <https://unfccc.int/process/the-kyoto-protocol/the-doha-amendment> (last visited May 5, 2020). Since a total of 144 instruments of acceptance are required for its entry into force, the Doha Amendment is now seven ratifications away from its entry into force. *Id.*

<sup>83</sup> See Alexandra Lesnikowski et al., *What Does the Paris Agreement Mean for Adaptation?*, 17 CLIMATE POL'Y 825, 825 (2016).

<sup>84</sup> U.N. Framework Convention on Climate Change, Conference of Parties, *The Cancun Agreements: Outcome of the Work of the Ad Hoc Working Group on Long-term Cooperative Action Under the Convention*, ¶¶ 2(b), 11, U.N. Doc. FCCC/CP/2010/7/Add.1 (Mar. 15, 2011).

<sup>85</sup> Paris Agreement, *supra* note 43, at art. 2(1)(b).

significant consequences in terms of the conduct expected from signatories, which must not undermine the purpose of the Agreement.

The PA's objective should be read in the light of the Agreement's Preamble, which sets as fundamental priorities the safeguarding of food security and the eradication of hunger jointly with the particular vulnerabilities of food production systems to the impacts of climate change.<sup>86</sup> Albeit not legally binding, the relevance of the Preamble clause is recognized in customary international law and will affect the interpretation of the operative provisions of the Agreement.<sup>87</sup> The role of adaptation in the PA is further bolstered by Article 7, which recognizes it as a global challenge with multi-level implications—local, subnational, national, regional, and international—while elevating it to a long-term goal.<sup>88</sup> The “global” goal on adaptation is one of “enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change”<sup>89</sup> with a view toward holding the global temperature increase to well below 2°C above pre-industrial levels, and aiming for a temperature increase of no more than 1.5°C above pre-industrial levels, as set forth in Article 2(1).<sup>90</sup> To do so, building adaptation is presented as a crucial method in the response to climate change, even for mitigation goals.<sup>91</sup> Article 7(4) as well as Article 4(7) explicitly acknowledge the synergies between adaptation and mitigation responses.<sup>92</sup> Although the PA fails to outline the integration process for co-benefits under its framework, it provides a linchpin from which climate change plaintiffs may deploy existing literature on the mitigation co-benefits of adaptation.<sup>93</sup>

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<sup>86</sup> *Id.* pmb1.

<sup>87</sup> Vienna Convention on the Law of Treaties art. 31(2), May 23, 1969, 1155 U.N.T.S. 331; see Makane Moïse Mbengue, *Preamble*, MAX PLANCK ENCYCLOPEDIA OF PUB. INT'L LAW, <https://opil.ouplaw.com/view/10.1093/law:epil/9780199231690/law-9780199231690-e1456?rskey=C1mju5&result=1&prd=OPIIL> (last updated Sept. 2006); see also Annalisa Savaresi, *Climate Change and Human Rights: Fragmentation, Interplay and Institutional Linkages*, in THE ROUTLEDGE HANDBOOK OF HUMAN RIGHTS AND CLIMATE GOVERNANCE 32 (Sébastien Duyck et al. eds., 2018).

<sup>88</sup> Paris Agreement, *supra* note 43, at art. 7(2).

<sup>89</sup> *Id.* art. 7(1).

<sup>90</sup> *Id.*

<sup>91</sup> Halldór Thorgeirsson, *Objective (Article 2.1)*, in THE PARIS AGREEMENT ON CLIMATE CHANGE: ANALYSIS AND COMMENTARY 123, 128 (Daniel Klein et al. eds., 2017).

<sup>92</sup> Paris Agreement, *supra* note 43, at art. 4(7), 7(4).

<sup>93</sup> See Chunli Zhao et. al., *Adaptation and Mitigation for Combating Climate Change—From Single to Joint*, 4 ECOSYSTEM HEALTH & SUSTAINABILITY 85, 85 (2018); see also Diana Ürge-Vorsatz et al.,

Article 7(2) further emphasizes that adaptation is a key component of the response to the adverse effects of climate change—to protect people, livelihoods and ecosystems—in particular, taking into account the urgent and immediate needs of those developing countries that are most vulnerable to such effects.<sup>94</sup> The principles underpinning the adaptation actions described in the PA are also of further relevance. Adaptation action “should” be “country-driven, gender-responsive, participatory” as well as “based on and guided by the best available science.”<sup>95</sup> In addition to reinforcing adaptation as a key pillar of the climate change framework, the PA sets forth a duty for states to engage in adaptation planning processes.<sup>96</sup> The use of the term “shall” in Article 7(9) endows the provision with a binding character.<sup>97</sup> Discretion may once again soften the implementation of such a duty as states are allowed to plan “as appropriate.”<sup>98</sup> The provision further allows states leeway in deciding the type of adaptation planning processes which “may include,” among others, “the process to formulate and implement national adaptation plans,” “formulating nationally determined prioritized action,” and “building the resilience of socioeconomic and ecological systems.”<sup>99</sup> This provision is nevertheless relevant to flesh out at least part of the content of adaptation plans, which the UNFCCC and the KP did not cover. More importantly, it sets forth a procedural duty to engage in the decision-making and implementation processes to pass adaptation measures.

Notwithstanding their inclusion in the PA, the adaptation provisions discussed so far are limited. While a standard of conduct may be expected from states with regard to their mitigation commitments, this has not yet been established for adaptation.<sup>100</sup> The former must be communicated through Nationally Determined Contributions (“NDCs”), which are meant to be progressive and submitted every five

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*Measuring the Co-Benefits of Climate Change Mitigation*, 39 ANN. REV. ENV'T & RESOURCES, 549, 556–57 (2014).

<sup>94</sup> Paris Agreement, *supra* note 43, at art. 7(2).

<sup>95</sup> *Id.* art. 7(5).

<sup>96</sup> *Id.* art. 7(9).

<sup>97</sup> *Id.*

<sup>98</sup> *Id.*

<sup>99</sup> *Id.*

<sup>100</sup> See Christina Voigt, *The Paris Agreement: What Is the Standard of Conduct for Parties?*, 26 QUESTIONS INT'L L. 17, 19 (2016) (explaining how parties are to pursue mitigation measures).

years, in addition to reflecting a state's highest possible ambition.<sup>101</sup> Similarly binding procedural rules have not been established for adaptation, and there is no requirement for either its level of ambition or progression. Article 7(10)–(12) in fact does not impose mandatory reporting for adaptation measures, stating that parties “should” submit and update periodically a communication regarding adaptation “as appropriate.”<sup>102</sup> Developing countries’ adaptation efforts are taken into account, pursuant to Article 7(14), in the global stocktake.<sup>103</sup>

During the 2018 United Nations Climate Change Conference, the parties attempted to establish clear rules on how countries should communicate their adaptation plans and actions. The adopted guidelines, however, do not have any legal weight and merely “encourage” signatories to submit adaptation communications in conjunction with, or as a component of, a nationally determined contribution.<sup>104</sup> Further guidance for countries’ communication of adaptation-related information will have to be developed by the Adaptation Committee with the support of the Intergovernmental Panel on Climate Change by 2022.<sup>105</sup> Other soft provisions of a procedural nature that relate to adaptation appear under Article 13(8), according to which, in the context of the enhanced transparency framework, states “should” also provide information on adaptation and the impacts of climate change “as appropriate.”<sup>106</sup> The wording does not employ mandatory language similar to Article 7(10).<sup>107</sup> Parties could therefore submit reports on the steps taken to address the impacts of climate change on human rights, including food security, but only on a voluntary basis.

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<sup>101</sup> *Id.* at 18, 25.

<sup>102</sup> Paris Agreement, *supra* note 43, at art. 7(10)–(12).

<sup>103</sup> *Id.* art. 7(14)(a).

<sup>104</sup> U.N. Framework Convention on Climate Change, *Further Guidance in Relation to the Adaptation Communication, Including, Inter Alia, as a Component of Nationally Determined Contributions, Referred to in Article 7, Paragraphs 10 and 11, of the Paris Agreement*, ¶ 11, U.N. Doc. FCCC/PA/CMA/2018/3/Add.1 (Mar. 19, 2019) [hereinafter *Decision 9/CMA.1*]. With regard to the agriculture sector, a decision was reached at the United Nations climate conference in November 2017 establishing the Koronivia joint work to develop and implement new strategies for adaptation and mitigation within the agriculture sector. U.N. Framework Convention on Climate Change, *Decision 4/CP.23 Koronivia Joint Work on Agriculture*, 11 U.N. Doc. FCCC/CP/2017/11/Add.1 (Feb. 8, 2018) [hereinafter *Koronivia Joint Work*].

<sup>105</sup> *Decision 9/CMA.1*, *supra* note 104, at ¶ 15.

<sup>106</sup> Paris Agreement, *supra* note 43, at art. 13(8).

<sup>107</sup> *Compare id.*, and *id.* art. 7(10).

Like the UNFCCC and the KP, the PA recognizes the role of technology in supporting actions on adaptation as well as mitigation. Article 10(1) highlights that parties “share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change.”<sup>108</sup> Such a provision, however, does not contain any binding commitment for the use of technology, not even best available technology, and is rather goal-oriented, needing further defined goals for its implementation.

A ground-breaking feature of the PA is its reference to human rights in the Preamble, which has significant consequences for the interpretation of the whole agreement, including the operative adaptation provisions mentioned above.<sup>109</sup> The Preamble in fact provides that parties should, when taking action to address climate change, respect, promote, and consider the obligations they have undertaken under ratified human rights treaties or relevant domestic laws.<sup>110</sup> However, three objections have downsized the importance of this section. First, the specific language aims at state actions that *address* climate change, rather than those that *contribute* to climate change.<sup>111</sup> But it should be noted that a UNFCCC provision, Article 4(1)(f), was similarly fashioned and in its decision the *Earthlife* court nonetheless considered actions *contributing* to climate change.<sup>112</sup> Second, human rights obligations are set as “respect, promote and consider,” rather than “respect, promote and fulfill,” but the latter is the mainstream set of obligations that are used for human rights matters.<sup>113</sup> Third, the recital refers to parties’ existing obligations, but what if a particular state has not ratified human rights treaties?<sup>114</sup>

One way out of this conundrum is to interpret this issue in light of relevant human rights instruments such as the ICESCR, in addition to the adaptation commitments mentioned in the operative text of the PA.<sup>115</sup> This could potentially reduce the level of state discretion to decide the priority and ambition of their actions

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<sup>108</sup> *Id.* art. 10(1).

<sup>109</sup> *Id.* pmb. ¶ 11.

<sup>110</sup> *Id.*; Sébastien Duyck et al., *Human Rights and the Paris Agreement’s Implementation Guidelines: Opportunities to Develop a Rights-Based Approach*, 12 CARBON & CLIMATE REV. 192, 194 (2018).

<sup>111</sup> See BODANSKY ET AL., *supra* note 40, at 312. *But see* Duyck et al., *supra* note 110, at 197–200.

<sup>112</sup> See generally *Earthlife Afr. Johannesburg v. Minister of Env’tl. Affairs* 2017 (1) SA 1 (GNP) (S. Afr.).

<sup>113</sup> See BODANSKY ET AL., *supra* note 40, at 228.

<sup>114</sup> *Id.*

<sup>115</sup> Paris Agreement, *supra* note 43, at art. 7.

to curb the consequences of climate change. Thus, it is possible to predict that a new generation of climate change litigation cases involving adaptation and concerning human rights such as the right to food and adequate standards of living, will also invoke the PA Preamble.<sup>116</sup> To date, however, court decisions featuring the application of the PA, such as *Earthlife*, *Future Generations* and *Urgenda*'s appeal have not made extensive use of the operative provisions of the PA.<sup>117</sup> For instance, in *Urgenda* the court referred to the PA to emphasize the global consensus on maintaining a global temperature below the 2°C limit as well as states' obligations to draw up climate plans whose ambition levels must increase progressively over time.<sup>118</sup> Conversely, *Gloucester* applied the PA's operative provisions, in particular Articles 2(1)(a) and 4(1)–(4).<sup>119</sup> Be that as it may, it is still possible for plaintiffs to sharpen the normative content of the PA's provisions in reference to human rights and international environmental principles, following the approach of plaintiff Pandey in the only climate change lawsuit to emerge, though not yet adjudicated, in India.<sup>120</sup>

#### e. Preliminary Conclusions

It is true that the UNFCCC—and to a lesser extent the KP—still appear to be a valid legal basis for adaptation claims regarding the right to food. The PA, however, given its greater focus on adaptation and its references to food security and human rights, seems to offer even stronger grounds for climate change litigation. This is

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<sup>116</sup> See María Pía Carazo, *Contextual Provisions (Preamble and Article 1)*, in *THE PARIS AGREEMENT ON CLIMATE CHANGE: ANALYSIS AND COMMENTARY* 107, 119–20 (Daniel Klein et al. eds., 2017).

<sup>117</sup> In *Earthlife*, the judgment referred, among others, to the PA provisions on mitigation commitments established under Article 4(2). *Earthlife* 2017 (1) SA 1 (GNP) para. 35. Whereas in *Future Generations*, the court made a generic reference to the PA to establish that the Colombian government failed to undertake adequate measures to address the deforestation of the Colombian Amazon. Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: L.Villabona, Radicación No. 11001-22-03-000-2018-00319-00 (STC 4360-2018) (Colom.). Interestingly, although the decision does not make explicit reference to it, the claimants had grounded their suit, inter alia, on the violation of the right to food, as a fundamental right threatened by climate change. *Id.* § 5.6, (Jan. 28, 2018) (Colum.). *Gloucester* applied Articles 2 and 4 of the Paris Agreement. *Gloucester Res. Ltd. v Minister for Planning* [2019] NSWLEC 7, ¶ 439 (Austl.).

<sup>118</sup> Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

<sup>119</sup> *Gloucester Res. Ltd.* NSWLEC 7, ¶¶ 526–27.

<sup>120</sup> See generally Application Petition, Pandey v. Union of India et al. (National Green Tribunal Mar. 25, 2017), [http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2017/20170325\\_Original-Application-No.-\\_\\_\\_-of-2017\\_petition-1.pdf](http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2017/20170325_Original-Application-No.-___-of-2017_petition-1.pdf).

especially true if such provisions are invoked jointly with national law and other international legal norms, namely human rights norms and international environmental law principles, and it is to these two types of norms that we turn in the following paragraphs.

### 3. The Human Rights Framework: A Selection

#### a. Introduction

This section aims to flesh out the cornerstone of human rights law and climate change litigation and identify a possible legal strategy to protect and ensure the right to food and adequate standards of living. By deploying human rights law in national climate change cases, litigants are in a position to enhance their access to justice mechanisms, meaning access to courts and effective remedies.<sup>121</sup> According to the “Report of the former Special Rapporteur on Human Rights and the Environment,”<sup>122</sup> climate change threatens the effective enjoyment of human rights, including, among others, the rights to life, health, water, food, and housing.<sup>123</sup> In particular, environmental degradation, climate change, and unsustainable development represent a serious threat to the right to life of present and future generations.<sup>124</sup> States therefore have a duty to prevent the infringement of human rights by preserving the environment and limiting climate change emissions caused by public and private actors.<sup>125</sup> This follows from their obligations to protect against environmental harm in general.<sup>126</sup> Moreover, under human rights law, states are required to do more than merely refrain from interfering with human rights; they

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<sup>121</sup> On the two prongs of access to justice, see *supra* Part II.A.

<sup>122</sup> John H. Knox (Special Rapporteur on Human Rights and the Environment), *Report of the Special Rapporteur on the Issue of Human Rights Obligations Relating to the Enjoyment of a Safe, Clean, Healthy and Sustainable Environment*, U.N. Doc. A/HRC/31/52, annex (Feb. 1, 2016).

<sup>123</sup> *Id.*; see also Human Rights Council Res. 29/15, U.N. Doc. A/HRC/RES/29/15, at 2 (July 22, 2015); Human Rights Council Res. 26/27, U.N. Doc. A/HRC/RES/26/27 (July 15, 2014); Human Rights Council Res. 25/21, U.N. Doc. A/HRC/RES/25/21 (Apr. 15, 2014); Elchin Amirbayov (Vice-President and Rapporteur), *Report of the Human Rights Council on Its Tenth Session*, U.N. Doc. A/HRC/10/29 (Nov. 9, 2009); U.N. High Commissioner, *Report of the Office of the United Nations High Commissioner for Human Rights on the Relationship Between Climate Change and Human Rights*, U.N. Doc. A/HRC/10/61 (Jan. 15, 2009).

<sup>124</sup> Human Rights Comm., *General Comment No. 36 Article 6: Right to Life*, ¶ 62, U.N. Doc. CCPR/C/GC/36 (Oct. 30, 2018).

<sup>125</sup> *Id.* ¶ 15.

<sup>126</sup> *Id.* ¶ 62.

must act diligently to protect human rights from sources of harm,<sup>127</sup> as well as remedy violations of these rights. This section seeks to prove how litigants might interpret duties to address climate change impacts under national law while also building on international human rights provisions, in particular the right to food and an adequate standard of living.

b. The International Covenant on Economic, Social and Cultural Rights: The Right to Food and the Right to an Adequate Standard of Living

The Universal Declaration of Human Rights was the first international instrument to recognize that everyone has a right to food, included within the right to an adequate standard of living.<sup>128</sup> A legally-binding commitment was first established by the ICESCR and followed by other sectorial Conventions.<sup>129</sup> Echoing the Universal Declaration, Article 11 of the ICESCR recognizes a right to an adequate standard of living for everyone, which includes a minimum entitlement to food, clothing, and housing, as well as the right to the continuous improvement of living conditions.<sup>130</sup> The General Comment on the right to food rendered by the Committee on Economic, Social and Cultural Rights (“CESCR”) outlined the right to food that was enshrined in the ICESCR as a component of the larger right to an adequate standard of living.<sup>131</sup> Albeit not legally binding, the General Comments of the CESCR are a source for authoritative interpretations of the rights of the ICESCR.<sup>132</sup> According to this document, the right to food is inextricably linked with the enjoyment of other human rights and is entrenched in the concept of human

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<sup>127</sup> UNITED NATIONS ENV'T PROGRAMME, CLIMATE CHANGE AND HUMAN RIGHTS, at ix (2015), [http://web.law.columbia.edu/sites/default/files/microsites/climate-change/climate\\_change\\_and\\_human\\_rights.pdf](http://web.law.columbia.edu/sites/default/files/microsites/climate-change/climate_change_and_human_rights.pdf).

<sup>128</sup> G.A. Res. 217 (III) A, Universal Declaration of Human Rights, art. 27.7.2(a)(iii) (Dec. 10, 1948) [hereinafter Universal Declaration of Human Rights].

<sup>129</sup> The human right to food is also recognized in the Convention on All Forms of Discrimination Against Women as well as the Convention on the Rights of the Child. See Convention on the Elimination of All Forms of Discrimination Against Women, Sept. 3, 1981, 1249 U.N.T.S. 13; Convention on the Rights of the Child, Sept. 2, 1990, 1577 U.N.T.S. 3.

<sup>130</sup> ICESCR, *supra* note 35, at art. 11.1.

<sup>131</sup> See The Right to Adequate Food, *supra* note 36.

<sup>132</sup> INT'L DEV. LAW ORG., REALIZING THE RIGHT TO FOOD: LEGAL STRATEGIES AND APPROACHES 18 (2014), [https://www.idlo.int/sites/default/files/pdfs/publications/Realizing%20the%20Right%20to%20Food\\_Legal%20Strategies%20and%20Approaches\\_full-report\\_0.pdf](https://www.idlo.int/sites/default/files/pdfs/publications/Realizing%20the%20Right%20to%20Food_Legal%20Strategies%20and%20Approaches_full-report_0.pdf) [hereinafter IDLO].



dignity.<sup>133</sup> States must ensure both the availability and the accessibility of food.<sup>134</sup> The availability of food refers to the ability of individuals to directly feed themselves from productive land or other natural resources, or by purchasing food through high functioning distribution, processing, and market systems.<sup>135</sup> Accessibility refers instead to both economic and physical access to food.<sup>136</sup> Economic accessibility means that an individual must be able to purchase food without compromising other basic needs.<sup>137</sup> Vulnerable people, especially those who are landless or impoverished, may need to be protected through special programs. Physical accessibility implies that food must be accessible to all, including vulnerable people—young children and the elderly, in particular.<sup>138</sup>

The availability and accessibility of food constitute essential elements of an individual's livelihood, comprised of "the capabilities, assets (including both material and social resources) and activities required for a means of living."<sup>139</sup> Although the right to a livelihood has not yet been explicitly recognized at the international level as a stand-alone human right, it is referenced in Article 25 of the Universal Declaration of Human Rights, which describes the right to an adequate standard of living: "everyone has the right to a standard of living . . . and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."<sup>140</sup>

Article 2 of the ICESCR imposes specific obligations that states must undertake,<sup>141</sup> which are applicable to all the other economic, social, and cultural

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<sup>133</sup> See The Right to Adequate Food, *supra* note 36, ¶ 4.

<sup>134</sup> *Id.* ¶ 6.

<sup>135</sup> *Id.* ¶¶ 8–12.

<sup>136</sup> See IDLO, *supra* note 132, at 19.

<sup>137</sup> *Id.*

<sup>138</sup> *Id.*

<sup>139</sup> UNITED NATIONS DEV. PROGRAMME & INT'L RECOVERY PLATFORM, GUIDANCE NOTE ON RECOVERY: LIVELIHOOD 1 (2010), [https://www.unisdr.org/files/16771\\_16771guidancenoteonrecoveryliviho.pdf](https://www.unisdr.org/files/16771_16771guidancenoteonrecoveryliviho.pdf).

<sup>140</sup> See Universal Declaration of Human Rights, *supra* note 128, art. 25(1). The right to an adequate standard of living has further been recognized in the recently adopted UN Declaration for the Rights of Peasants and Other People Working in Rural Areas, which aims at protecting the rights of peasants—women and men—and improve livelihoods in rural areas. See G.A. Res. 73/165, Declaration on the Rights of Peasants and Other People Working in Rural Areas, art. 19 (Dec. 17, 2018).

<sup>141</sup> ICESCR, *supra* note 35, at art. 2(1). It is worth noting that Article 2 includes on jurisdictional provision, thus entailing the possibility that States be subject to extra-territorial obligations. See *id.*

rights, including the right to an adequate standard of living, under which the right to food is a component. States must proactively create an environment conducive to ensuring that people have access to food. Where there is not adequate access, states must provide it directly.<sup>142</sup> Further, states should not postpone the distribution of food, but undertake steps as expeditiously as possible to improve the ability of individuals to gain adequate access to it.<sup>143</sup> The lack of the “adequate” access to food must be interpreted not only in the light of the present prevailing social, economic, and climatic conditions of a country, but also with respect to future and uncertain scenarios.<sup>144</sup> This approach is in harmony with the principle of precaution, which encourages states to look beyond the status quo and anticipate, prevent, or minimize the potential threats of climate change.<sup>145</sup>

Similar to all other human rights, states are bound by their obligations to respect, protect, and fulfill the right to food and an adequate standard of living.<sup>146</sup> This obligation directs states to avoid the implementation of measures that prevent individuals from accessing adequate food. Viewed through the lens of climate change, the duty to *respect* requires states to avoid contributing to environmental harm through policies that undermine adaptive approaches. Complementarily, the obligation to *protect* aims to ensure that third-parties do not interfere with the enjoyment of the right to food. Applied to the impacts of climate change, the duty to protect appears to require states to regulate the actions of private individuals who contribute to climate change.<sup>147</sup> The obligation to *fulfill* is comprised of the duties to facilitate and provide. The former implies that states should proactively engage in activities intended to strengthen people’s access to and utilization of resources as a

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<sup>142</sup> FOOD & AGRIC. ORG. OF THE UNITED NATIONS, THE RIGHT TO FOOD IN PRACTICE: IMPLEMENTATION AT THE NATIONAL LEVEL 10, 16 (2006), <http://www.fao.org/3/a-ah189e.pdf>.

<sup>143</sup> See The Right to Adequate Food, *supra* note 36, ¶ 14.

<sup>144</sup> *Id.* ¶ 7; see also CHELSEA SMITH ET AL., QUAKER UNITED NATIONS OFFICE, REALIZING THE RIGHT TO FOOD IN AN ERA OF CLIMATE CHANGE: THE IMPORTANCE OF SMALL-SCALE FARMERS 1, 2 (2015), <https://quino.org/sites/default/files/resources/Realizing%20the%20right%20to%20food%20in%20an%20era%20of%20climate%20change.pdf>.

<sup>145</sup> See UNFCCC, *supra* note 41, art. 3(3).

<sup>146</sup> See The Right to Adequate Food, *supra* note 36, ¶ 14; Asbjørn Eide, *The Human Right to Adequate Food and Freedom from Hunger*, <http://www.fao.org/docrep/w9990e/w9990e03.htm> (last visited Sept. 26, 2018). For more on the relationship between right to food and right to adequate standard of living, see U.N.H.R. FACTSHEET NO. 34, *supra* note 38, at 7.

<sup>147</sup> ELISABETH CAESENS ET AL., COLUMBIA HUMAN RIGHTS INST., CLIMATE CHANGE AND THE RIGHT TO FOOD 44 (Heinrich Böll Found. ed., 2009).

means to ensure their livelihood, including food security.<sup>148</sup> For example, states should assist in the development of alternative food sources and take measures to guarantee that undernourished people have access to productive resources or means, such as land, water, microcredit, and seeds.<sup>149</sup> As highlighted in the ICESCR, they shall also “improve methods of production . . . of food by making full use of technical and scientific knowledge . . . in such a way as to achieve the most efficient development and utilization of natural resources.”<sup>150</sup> The duty to provide implies that whenever an individual or group is unable to enjoy the right to adequate food for reasons beyond their control, states are obliged to provide that right.<sup>151</sup> An example is the case of natural disasters caused by climate change. In such circumstances, in order to comply with the duty to fulfill, states must assist in the provision of emergency food supplies, safety nets, and social protection provisions.<sup>152</sup>

The most common counterargument against a claim based on the direct or indirect violation of the right to food—in particular the obligation to fulfill—is a lack of sufficient resources, especially when the suit concerns a developing country. Resource availability is contemplated in the ICESCR, which provides that a state should undertake steps “to the maximum of its available resources” with a view to progressively establishing all economic, social, and cultural rights.<sup>153</sup> Nonetheless, the CESCR states that even where the available resources are demonstrably inadequate, the obligation remains for a party to the agreement to strive to ensure the widest possible enjoyment of the relevant rights under prevailing circumstances.<sup>154</sup> When states fail in their duties to respect, protect, or fulfill the right to food, they must provide victims with access to various judicial remedies including restitution, compensation, and the satisfaction or guarantees of non-repetition.<sup>155</sup> Accountability is an essential element of the right to food as it ensures that states comply with human

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<sup>148</sup> See *The Right to Adequate Food*, *supra* note 36, ¶ 15.

<sup>149</sup> GOLAY, *supra* note 39, at 1, 18.

<sup>150</sup> ICESCR, *supra* note 35, art. 11(2)(a).

<sup>151</sup> See CAESENS ET AL., *supra* note 147.

<sup>152</sup> *Id.*

<sup>153</sup> ICESCR, *supra* note 35, art. 2.

<sup>154</sup> Comm. on Econ., Soc. and Cultural Rights, *CESCR General Comment No. 3: The Nature of States Parties' Obligations (Art. 2, Para. 1, of the Covenant)*, ¶ 11, U.N. Doc. E/1991/23 (Dec. 14, 1990) [hereinafter CESCR].

<sup>155</sup> See *The Right to Adequate Food*, *supra* note 36, ¶ 32.

rights obligations. The obligation to ensure an effective remedy applies to all economic, social, and cultural rights and therefore, generally, the right to an adequate standard of living.

Claims brought to establish violations of the human right to food have been long debated on the grounds that social, economic, and cultural rights are deemed excessively vague, resource-intensive, and subject to available means and progressive realization.<sup>156</sup> Yet, their justiciability has been confirmed in many cases within different jurisdictions and in legal literature.<sup>157</sup> Case law from India, South Africa and, more recently, Argentina, Colombia, Paraguay, and Switzerland shows that courts have provided individuals with a means to obtain remedies for past violations, but also proactive measures to fulfill the human right to food.<sup>158</sup> At the level of international law, the International Court of Justice ruled on Israel's violations, *inter alia*, the right to an adequate standard of living as a consequence of its conduct in the Palestinian territories, ultimately recognizing its justiciability.<sup>159</sup> With regard to literature, empirical theoretical research shows that economic, social, and cultural rights are not less "justiciable" than civil and political rights.<sup>160</sup> Absent an explicit right to an effective remedy under the ICESCR, such recognition of the International Covenant on Civil and Political Rights<sup>161</sup> ("ICCPR") is valid both for civil and political rights, and economic, cultural, and social rights. In fact, it is the Preamble to the ICESCR, and the CESCR itself, which emphasize the "interdependence and indivisibility" of economic, cultural, and social rights with political and civil rights.<sup>162</sup>

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<sup>156</sup> FOOD & AGRIC. ORG. OF THE UNITED NATIONS, THE RIGHT TO FOOD GUIDELINES: INFORMATION PAPERS AND CASE STUDIES 86 (2006).

<sup>157</sup> See GOLAY, *supra* note 39, at 29–30.

<sup>158</sup> *Id.* at 24–27.

<sup>159</sup> Legal Consequences of the Construction of a Wall in the Occupied Palestinian Territory, Advisory Opinion, 2004 I.C.J. Rep. 136, ¶ 134 (July 9).

<sup>160</sup> Christian Courtis, *The Right to Food as a Justiciable Right: Challenges and Strategies*, in 11 MAX PLANCK YEARBOOK OF UNITED NATIONS LAW 317, 337 (Armin Von Bogdandy et al. eds., 2007). With respect to both dogmatic and empirical research, see *id.* With respect to empirical research, see Malcom Langford et al., *Introduction: From Jurisprudence to Compliance*, in SOCIAL RIGHTS JUDGMENTS AND THE POLITICS OF COMPLIANCE: MAKING IT STICK 20 (Malcolm Langford et al. eds., 2017).

<sup>161</sup> See International Covenant on Civil and Political Rights, Dec. 19, 1966, 999 U.N.T.S. 171.

<sup>162</sup> ICESCR, *supra* note 35, pmb.; Comm. on Econ., Soc. and Cultural Rights, *General Comment 8: The Relationship Between Economic Sanctions and Respect for Economic, Social and Cultural Rights*, ¶ 8, U.N. Doc. E/C.12/1997/8 (Dec. 12, 1997); see also SAUL ET AL., *supra* note 49, at 164 n.66. On the recognition by scholarship of the right to an effective remedy also for violations of economic, social, and

While in some of these cases regional and national courts have applied the right to food directly, in others the violations of the right to food has been framed as violations of other rights.<sup>163</sup> These were the right to an adequate standard of living of which, as seen previously, the right to food is a component and the right to human dignity as well as the right to land consequently proving the interdependency of human rights.<sup>164</sup>

### c. Preliminary Conclusions

All in all, courts are well placed to interpret the duty to address the impacts of climate change under national law through international human rights provisions. Human rights law can hammer out climate change claims, which shall be justiciable until proven to the contrary. In the interpretation of one Australian judge, equal access to justice when climate claims are justiciable is one of the more meaningful contributions that courts may make in tackling climate change.<sup>165</sup> Furthermore, the use of human rights norms to make governments accountable for environmental harm, including climate change, is not new. Human rights have been invoked in *Leghari*,<sup>166</sup> *Urgenda*,<sup>167</sup> and *Future Generations*<sup>168</sup> to attain two objectives: interpret national law and push for adequate mitigation and adaptive measures. Litigants could therefore base future claims on the right to food or the right to adequate standards of living enshrined in the CESC, coupled with the human rights provisions found in the Preamble of the Paris Agreement. They could further rely on previously-established human rights that strictly correlate with the right to food, such as the right to life. The strategy of relying on the interdependence of human rights could be particularly successful in jurisdictions where the right to food is not explicitly recognized.

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cultural rights, see Francesco Francioni, *The Right of Access to Justice Under Customary International Law*, in ACCESS TO JUSTICE AS A HUMAN RIGHT 31 n.16 (Francesco Francioni ed., 2007).

<sup>163</sup> See Curtis, *supra* note 160, at 328.

<sup>164</sup> *Id.*

<sup>165</sup> Brian J. Preston, *The Contribution of the Courts in Tackling Climate Change*, 28 OXFORD J. ENVTL. L. 11, 12 (2016).

<sup>166</sup> *Leghari v. Pak.* (2015) W.P. No. 25501/2015 (Lahore High Ct.) (Pak.).

<sup>167</sup> Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

<sup>168</sup> Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: L.Villabona, No. 11001-22-03-000-2018-00319-00 (para. 12) (Colom.).

#### 4. International Environmental Law Principles

##### a. Introduction

This section examines whether international environmental law principles (“IEL principles”) could support litigation strategies that aim to advance climate-smart agricultural policies. Admittedly, the precise legal status of IEL principles is still unsettled and debated in the literature. Quite unsurprisingly, Article 38 of the Statute of the International Court of Justice fails to mention them.<sup>169</sup> According to Professor Phillippe Sands, some of these principles reflect customary law, while others may be conceived as emerging legal obligations.<sup>170</sup> Others have a less developed legal status.<sup>171</sup> Notwithstanding, IEL principles are reflected in international agreements, judicial decisions, state practice, and soft law instruments. It is argued that they have an interpretative role—laying down parameters which affect how courts decide<sup>172</sup>—and may also function as primary norms in the resolution of disputes.<sup>173</sup> Principles of international environmental law housed in the climate change regime may provide a fertile ground from which to shape the duties of states to undertake adequate action—including adaptation measures—to anticipate future climate change impacts.<sup>174</sup> IEL principles have already been invoked by plaintiffs and judges in most of the climate change cases referred to throughout this Article.<sup>175</sup> This section will, in particular, analyze the principle of equity, the principle of precaution, and the principle of sustainable development.

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<sup>169</sup> On debunking the myth on the exhaustiveness of Article 38, see Anthea Roberts & Sandesh Sivakumaran, *The Theory and Reality of the Sources of International Law*, in *INTERNATIONAL LAW passim* (Malcom Evans ed., 5th ed. 2018).

<sup>170</sup> PHILIPPE SANDS ET AL., *PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW* 198 (Cambridge Univ. Press, 4th ed. 2018) (1995).

<sup>171</sup> *Id.*

<sup>172</sup> Alan E. Boyle, *Reflections on the Relationship of Treaties and Soft Law*, 48 *INT’L & COMP. LAW Q.* 901, 907 (1999).

<sup>173</sup> JORGE E. VIÑUALES & PIERRE-MARIE DUPUY, *INTERNATIONAL ENVIRONMENTAL LAW* 60–61 (2d ed. 2018).

<sup>174</sup> See Lavanya Rajamani, *Rights Based Climate Litigation in the Indian Courts: Potential, Prospects and Potential Problems* 16 (Ctr. for Policy Research Climate Initiative, Working Paper No. 2013/1).

<sup>175</sup> See *supra* note 29 and accompanying text.

Other international environmental law principles remain outside of the scope of the present inquiry, as they are less relevant for the case study in Part IV.<sup>176</sup>

b. The Principle of Equity: Intergenerational and Intragenerational

The principle of equity encompasses both intergenerational and intragenerational equity. Intergenerational equity calls on states to take into account the long-term impacts of their activities for the benefit of present and future generations.<sup>177</sup> It is premised on the equality of rights across generations in relation to the use of natural resources.<sup>178</sup> On the other hand, intragenerational equity—a relatively new and highly debated concept under international law—addresses inequity between people of the same generation<sup>179</sup> by ensuring fair access to natural resources and a healthy environment. Notably, the principle of CBDR is a specification of intragenerational equity.<sup>180</sup> Thus, the principle of equity is deeply embedded in the climate change regime, either explicitly or indirectly—through recurrent references to CBDR—in the UNFCCC,<sup>181</sup> KP, and PA. On these grounds, national courts have applied the international principle of equity by referring to intergenerational equity, intragenerational equity, or CBDR. Indeed, the principle of equity—both in its intergenerational and intragenerational forms—provides

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<sup>176</sup> In particular, the no-harm principle will not be dealt in this paper, despite its reference in some court decisions as *Urgenda*. See generally Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.). This is because the no-harm principle mainly applies with respect to inter-state relations. Moreover, the principle of prevention is not covered because the principle of precaution better suits the purpose of the case discussed in Part III. See *infra* Part III.

<sup>177</sup> Edith B. Weiss, *In Fairness to Future Generations and Sustainable Development*, 8 AM. U. INT'L L. REV. 19, 19 (1992).

<sup>178</sup> *Id.* at 22.

<sup>179</sup> Dinah Shelton, *Equity*, in THE OXFORD HANDBOOK OF INTERNATIONAL ENVIRONMENTAL LAW 639, 642 (Daniel Bodansky et al. eds., 2007).

<sup>180</sup> Catherine Redgwell, *Principles and Emerging Norms in International Law: Intra- and Inter-Generational Equity*, in THE OXFORD HANDBOOK OF INTERNATIONAL CLIMATE CHANGE LAW 185, 186 (Kevin R. Gray et al. eds., 2016); see also COMM. ON LEGAL PRINCIPLES RELATING TO CLIMATE CHANGE, INT'L LAW ASS'N, DECLARATION OF LEGAL PRINCIPLES RELATING TO CLIMATE CHANGE 3 (2014); Brian J. Preston, *The Role of the Judiciary in Promoting Sustainable Development: The Experience of Asia and the Pacific*, 9 ASIA PAC. J. ENVTL L. 1, 75 (2009); Shelton, *supra* note 179, *passim*. On CBDR as part of equity, see SANDS ET AL., *supra* note 170, at 244.

<sup>181</sup> See UNFCCC, *supra* note 41, pmb. ¶ 6; *id.* arts. 3(1), 4(1); Kyoto Protocol, *supra* note 42, art. 10; Paris Agreement, *supra* note 43, pmb. ¶¶ 3, 11; *id.* arts. 2(2), 4(3).

additional grounds to establish the duty of states to address global warming by imposing obligations of adaptation and mitigation to tackle climate change.

In both *Urgenda* and *Leghari*, national law was interpreted through the international principle of equity. In *Urgenda*, the court allowed an NGO to invoke it procedurally in order to ensure standing for future generations.<sup>182</sup> In a different way, the court applied the principle of equity in *Leghari* only with respect to the substantive prong of access to justice, namely the shaping of remedies.<sup>183</sup> By applying the principle of equity as a principle of international law, the court recognized the government's failure to enforce existing climate change laws and policies and established a Climate Change Commission in order to trigger and streamline the law-enforcement process.<sup>184</sup> Reference to equity was made, in a substantial manner, in *Future Generations* where plaintiffs claimed that the Colombian government's inaction was jeopardizing the right to a safe environment for present and future generations and impairing the human rights to health, dignity, and food.<sup>185</sup> In fact, the Colombian Supreme Court ordered the adoption of both mitigation and adaptation measures by relying, inter alia, on the intergenerational equity principle as well as the principle of solidarity and co-responsibility of the Colombian government vis-à-vis all human beings to curb emissions, in other words the intragenerational equity principle.<sup>186</sup>

Interestingly, intragenerational concerns appear in contexts beyond the climate change regime, namely the Convention on Biological Diversity ("CBD"), and can provide further grounds for climate change litigation.<sup>187</sup> The CBD calls for the promotion and equitable sharing of the benefits arising from the utilization of knowledge, innovations, and practices of indigenous and local communities relevant

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<sup>182</sup> See Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

<sup>183</sup> On this distinction, see FOOD & AGRIC. ORG. OF THE UNITED NATIONS, *supra* note 1.

<sup>184</sup> See *Leghari v. Pak.* (2015) W.P. No. 25501/2015 (Lahore High Ct.) 6 (Pak.).

<sup>185</sup> Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: L.Villabona, No. 11001-22-03-000-2018-00319-00 (Colom.) (complaint).

<sup>186</sup> Corte Suprema de Justicia [C.S.J.] [Supreme Court], abril 5, 2018, M.P: L.Villabona, No. 11001-22-03-000-2018-00319-00 (Colom.), <https://www.escri-net.org/sites/default/files/caselaw/fallo-corte-suprema-de-justicia-litigio-cambio-climatico.pdf>.

<sup>187</sup> It is also recognized in Principle 5 of the Rio Declaration, but refers only to inter-state relations. See *Rio Declaration*, *supra* note 32, princ. 5.



for the conservation and sustainable use of biological diversity.<sup>188</sup> In the context of climate change, the CBD can be interpreted as calling on parties to respect the traditional knowledge and practices of indigenous and local communities when adopting mitigation and adaptation measures, involving such communities in decision-making processes and sharing with them the benefits that arise from their contributions to mitigate and adapt to climate change.<sup>189</sup>

In short, the principle of equity—both intergenerational and intragenerational—may also be used to flesh out national duties and precipitate adaptive measures to ensure the right to food and adequate standards of living. Relying on this principle, whether directly or through the CBDRR and related principles, may be especially effective in those areas of the world—and with respect to those individuals—most vulnerable to climate change.

### c. The Precautionary Principle

The precautionary principle is recognized in Principle 15 of the Rio Declaration which establishes, in mandatory terms, that states shall ensure its wide application and that the lack of scientific certainty may not be used as an argument to delay carrying out cost-effective measures to prevent environmental damage.<sup>190</sup> Despite the non-binding character of the Rio Declaration, the precautionary principle has also been included in a significant number of international and regional treaties on diverse subjects. These include environmental conventions such as the CBD<sup>191</sup> and—in the context of climate change—the UNFCCC, which urges states “to anticipate, prevent or minimize the causes of climate change.”<sup>192</sup> Applied to the context of global warming it calls, *inter alia*, for adaptation policies in case of threats of “serious or irreversible damage.”<sup>193</sup>

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<sup>188</sup> Convention on Biological Diversity art. 8(j), June 5, 1992, 1760 U.N.T.S. 79 [hereinafter CBD].

<sup>189</sup> Elisa Morgera, *No Need to Reinvent the Wheel for a Human Rights-Based Approach to Tackling Climate Change: The Contribution of International Biodiversity Law*, in *CLIMATE CHANGE AND THE LAW* 359, 365 (Erkki J. Hollo et al. eds., 2013). Intragenerational equity enshrined in the climate change regime may possibly be invoked in contexts where the inaction of states may aggrieve the standards of living and the right to food of the most vulnerable to climate change—for example, rural women.

<sup>190</sup> *Rio Declaration*, *supra* note 32, princ. 15.

<sup>191</sup> CBD, *supra* note 188, pmb. ¶ 9.

<sup>192</sup> See UNFCCC, *supra* note 41, art. 3(3).

<sup>193</sup> *Id.*

The precautionary principle applies to risks of serious or irreversible damage and uncertainties.<sup>194</sup> In the past, the precautionary principle has been invoked in a string of judicial cases before the International Court of Justice, including the renowned *Gabčíkovo-Nagymaros* dispute.<sup>195</sup> However, in this case the court refrained from addressing the legal status of the principle, limiting itself to both parties' agreement to rely on it.<sup>196</sup> To date, there is no strong consensus on the status of such a principle, although it has been argued that there is sufficient evidence of state practice to consider it a part of customary law.<sup>197</sup> Whether it is viewed as customary law or not, the precautionary principle remains a principle of international environmental law and as such it may be relied upon by courts.<sup>198</sup>

Indeed, courts have not hesitated to apply this principle in climate change cases. For instance, in *Urgenda*, the court found that the Dutch government was in breach of its duty of care prescribed under national law, as interpreted in light of IEL principles, European Union law, and human rights law.<sup>199</sup> The precautionary principle, therefore, contributed to a further development of governments' duty of care; in the case of *Urgenda*, the Dutch government was expected to mitigate the emissions causing climate change.<sup>200</sup> The fact that some climatic events lurk in the lowlands of uncertainty was not a rebuke of the duty to act, but rather a driver of it, in the interpretation of the court.<sup>201</sup> As previously mentioned, the application of the precautionary principle is also epitomized by the *Urgenda* decision following the

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<sup>194</sup> See Alessandra Arcuri, *Reconstructing Precaution, Deconstructing Misconceptions*, 21 ETHICS & INT'L AFF. 359, 362 (2007).

<sup>195</sup> *Gabčíkovo-Nagymaros Project (Hung. v. Slov.)*, Judgment, 1997 I.C.J. Rep. 7, ¶ 97 (Sept. 25).

<sup>196</sup> See SANDS ET AL., *supra* note 170, at 238.

<sup>197</sup> *Id.* at 239.

<sup>198</sup> BIRNIE ET AL., *supra* note 53, at 162–63.

<sup>199</sup> Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

<sup>200</sup> *Id.*

<sup>201</sup> *Id.*

“economics of precaution” laid out by the IPCC.<sup>202</sup> The baseline out of which the precautionary remedies were shaped consisted, in fact, of IPCC science.<sup>203</sup>

While in *Urgenda* the precautionary principle was applied exclusively to mitigation policies, in *Leghari* this was applied to adaptation measures.<sup>204</sup> In *Leghari*, the court found that the state’s inaction breached the fundamental rights of its citizens,<sup>205</sup> and pointed to adaptation actions in the water sector, motivated by the fact that Pakistan is an agricultural country and water is an essential resource for sustained economic growth as well as human survival.<sup>206</sup> It further ordered adaptation measures in the agricultural sector given that it represents the “life line and single largest sector of Pakistan’s economy,” contributing 21% of GDP, employing 45% of the labor force, and determining about 70% of export earnings.<sup>207</sup> Similar to *Urgenda*, the national provisions were interpreted in light of existing international environmental principles, including the precautionary principle.<sup>208</sup> The *Leghari* case could be applied by analogy to other jurisdictions.<sup>209</sup> In particular, small islands may also count on the emphasis that Agenda 21 of the Rio Declaration placed on the precautionary approach to reduce the risks and effects related to climate change, in particular sea-level rise.<sup>210</sup> Even assuming that there is no certain evidence of the consequences that will occur in the future, states may not invoke the excuse of uncertainty to postpone adaptation measures that would allow for the alleviation of the irreversible impacts of climate change.

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<sup>202</sup> Suryapratim Roy & Edwin Woerdman, *Situating Urgenda v. the Netherlands Within Comparative Climate Change Litigation*, 34 J. ENERGY & NAT. RESOURCES L. 165, 180, 186 (2016).

<sup>203</sup> Rb.’s-Gravenhage 24 juni 2015, AB 2015, 336 m.nt GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.); Hof’s-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda).

<sup>204</sup> Rb.’s-Gravenhage, AB 2015 (Staat der Nederlanden/Stichting Urgenda); *Leghari v. Pak.* (2015) W.P. No. 25501/2015 (Lahore High Ct.) (Pak.).

<sup>205</sup> *Leghari*, 25501/201 WP ¶ 7.

<sup>206</sup> *See id.* ¶ 3.

<sup>207</sup> *Id.* ¶ 10.

<sup>208</sup> *Id.* ¶ 7.

<sup>209</sup> Rajamani, *supra* note 174, at 15.

<sup>210</sup> *Rio Declaration*, *supra* note 32, princ. 21.

#### d. The Principle of Sustainable Development

Finally, the principle of sustainable development is of crucial importance in climate change litigation involving the right to food and adequate standards of living. The Brundtland Report defined it as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>211</sup> Since then, the concept has featured in many international instruments, for example the Rio Declaration,<sup>212</sup> and in international decisions such as *Gabčíkovo-Nagymaros*<sup>213</sup> and *Pulp Mills*.<sup>214</sup> According to some accounts, the principle of sustainable development encompasses a host of further principles. Its substantive prong includes the integration of environmental protection, social and economic development, the sustainable utilization of natural resources, intergenerational and intragenerational equity, and the precautionary approach.<sup>215</sup> From a procedural perspective it encompasses the rights to information, public participation, and access to justice.<sup>216</sup> What is uncontroverted is that the core of the principle lies in the principle of integration, which does not demand a balance between the economic, social and environmental pillars, but rather an ecological baseline guaranteeing the ecosystem’s functioning.<sup>217</sup>

There is wide debate around the legal status of sustainable development under international law. It has been argued that while states do not have a legal obligation to develop sustainably, sustainable development is conceived of as an objective

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<sup>211</sup> World Comm’n on Env’t Dev., *Our Common Future*, at 41, ¶ 1, U.N. Doc. A/42/427, annex (1987). The UN’s World Commission for Environment and Development, also known as Brundtland Commission after the name of its Chair (the Norwegian Prime Minister Gro Brundtland), published the report “Our Common Future,” also referred to as the “Brundtland Report” in 1987. *Id.* The Brundtland Report is considered a milestone as it introduced the concept of “sustainable development” and explained how it may be achieved.

<sup>212</sup> *See, e.g., Rio Declaration, supra* note 32, princs. 3, 4.

<sup>213</sup> *Gabcikovo-Nagymaros Project (Hung./Slovk.)*, Judgment, 1997 I.C.J. Rep. 7, ¶ 140 (Sept. 25).

<sup>214</sup> *Pulp Mills on the River Uruguay (Arg. v. Uru.)*, Judgment, 2010 I.C.J. Rep. 14, ¶ 80 (Apr. 20).

<sup>215</sup> Conference of the Int’l Law Ass’n, *New Delhi Declaration of Principles of International Law Relating to Sustainable Development*, U.N. Doc. A/CONF.199/8 (Apr. 2, 2002) [hereinafter *New Delhi Declaration*]; *Rio Declaration, supra* note 32, princs. 3–17.

<sup>216</sup> *New Delhi Declaration, supra* note 215.

<sup>217</sup> *See, e.g., Douglas A. Kyser, Sustainable Development and Private Global Governance*, 83 TEX. L. REV. 2109, 2145 (2005).

which all states should strive to achieve.<sup>218</sup> To this extent sustainable development has been recognized as a principle of customary law.<sup>219</sup> Recently, legal doctrine has characterized sustainable development as entailing not only obligations of means, but also obligations of results.<sup>220</sup>

In the context of climate change, such an obligation is formulated in soft law terms and clearly appears in Article 3(4) of the UNFCCC, which provides that parties “have a right and should promote sustainable development” in their actions to fight global warming.<sup>221</sup> Similar provisions of the KP embrace this principle<sup>222</sup> and the recently adopted PA outlines sustainable development concerns.<sup>223</sup> For example, the PA’s Preamble highlights the “intrinsic relationship that climate change actions responses and impact have with equitable access to sustainable development and eradication of poverty.”<sup>224</sup> Moreover, some provisions call for the Agreement to be implemented “in the context of sustainable development.”<sup>225</sup> Interestingly, a clear link is established between adaptation and sustainable development.<sup>226</sup> Pursuant to Article 7 of the PA, climate change adaptation will benefit from the sustainable management of natural resources.<sup>227</sup>

Given the legal status of the sustainable development principle in international law and frequent references to it in the international climate regime, we argue that it

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<sup>218</sup> Virginie Barral, *Sustainable Development in International Law: Nature and Operation of an Evolutive Legal Norm*, 23 EUR. J. INT’L L. 377, 388 (2012); see also BIRNIE ET AL., *supra* note 53, at 127.

<sup>219</sup> Barral, *supra* note 218, at 388.

<sup>220</sup> On this most recent interpretation, see VIÑUALES & DUPUY, *supra* note 173, at 164. On the integration principle as an objective, see André Nollkaemper, *Three Conceptions of the Integration Principles in International Environmental Law*, in ENVIRONMENTAL POLICY INTEGRATION: GREENING SECTOR POLICIES IN EUROPE 22, 25–26 (Andrea Lenschow ed., 2002). See also Elisa Morgera, *Under the Radar: The Role of Fair and Equitable Benefit-Sharing in Protecting and Realizing Human Rights Connected to Natural Resources* 19 (BENELEX Working Paper No. 12, 2018).

<sup>221</sup> UNFCCC, *supra* note 41, art. 3(4).

<sup>222</sup> Kyoto Protocol, *supra* note 42, art. 2.

<sup>223</sup> Francesco Sindico, *Paris, Climate Change, and Sustainable Development*, 6 CLIMATE L. 130, 131–32 (2016).

<sup>224</sup> Paris Agreement, *supra* note 43, pmb. ¶ 8.

<sup>225</sup> *Id.* arts. 2(1), 4(1).

<sup>226</sup> Sindico, *supra* note 223, at 135.

<sup>227</sup> Paris Agreement, *supra* note 43, art. 7.

could be used as a parameter for interpretation<sup>228</sup> in climate change cases. Admittedly, courts have relied on the international principle of sustainable development, as established in the UNFCCC,<sup>229</sup> in *Urgenda*,<sup>230</sup> *Leghari*,<sup>231</sup> and *Gloucester Resources*.<sup>232</sup> Due to the timing of these rulings, the sustainable development principle recognized in the provisions of the PA could not have been invoked.<sup>233</sup> Nonetheless, in hindsight, it would have certainly offered an additional legal basis to ground courts' decisions to oblige states to increase their efforts in addressing the adverse effects of climate change.

#### e. Preliminary Conclusions

In sum, the principles of precaution, equity, and sustainable development—as used in the above-mentioned court judgments—may serve as a valid legal basis for access to justice and in precipitating climate change-related measures to protect the right to food and adequate standards of living.

### III. CLIMATE-SMART AGRICULTURE: A BLUEPRINT FROM THE ANDAMAN AND NICOBAR ISLANDS

The Andaman and Nicobar Islands form an archipelago of 572 islands scattered between the Gulf of Bengal and the Andaman Sea, southeast of mainland India.<sup>234</sup> Part of the Union of India, the archipelago features some of the most pristine ecosystems in the world.<sup>235</sup> The islands' economy is based predominantly on

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<sup>228</sup> See VOIGT, *supra* note 56, at 145–93.

<sup>229</sup> UNFCCC, *supra* note 41, art. 3.

<sup>230</sup> See Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.).

<sup>231</sup> *Leghari v. Pak.*, (2015) W.P. No. 25501/2015 (Lahore High Ct.) 1, 5 (Pak.).

<sup>232</sup> *Gloucester Res. Ltd. v Minister for Planning* [2019] NSWLEC 7, ¶¶ 694, 696 (Austl.).

<sup>233</sup> Paris Agreement, *supra* note 43, pmb. ¶ 8, arts. 2(1), 4(1), 6(1).

<sup>234</sup> Javed N. Malik et al., *Landscape Changes in the Andaman and Nicobar Islands (India) After the December 2004 Great Sumatra Earthquake and Indian Ocean Tsunami*, 22 EARTHQUAKE SPECTRA 43, 43 (2006).

<sup>235</sup> GOV'T OF INDIA PLANNING COMM'N, REPORT OF THE TASK FORCE ON ISLANDS, CORAL REEFS, MANGROVES & WETLANDS IN ENVIRONMENT & FORESTS 6 (2007).

agriculture, the occupation of most of the residents,<sup>236</sup> and tourism.<sup>237</sup> Considering a population of 380,000 inhabitants, 195,000 tourists visited the archipelago in 2010–11, including 14,500 international tourists.<sup>238</sup> In order to support the food demands of both the domestic and tourist population and considering agro-climatic conditions,<sup>239</sup> rice is the mainstay food crop of the islands.<sup>240</sup>

For the purpose of our hypothetical case, we focus on the impacts of climate change on the rice farming sector and the access to justice avenues available to counter such impacts. After briefly describing the rice farming sector of the Andaman and Nicobar Islands, as well as the adaptation challenges posed by soil salinity, we identify a program developing rice genotypes that produce high yields under salinity conditions. Among the host of rights upheld through such a program lie the rights to food and an adequate standard of living for both farmers and the population at large. In this case, we solely consider the entitlements of farmers. Repurposing some of the barren lands for sustainable use and disseminating climate-smart agricultural practices across the islands appear to be sensible choices to adapt to the effects of climate change, as well as to attain mitigation co-benefits. Moreover, such a program offers insights into the instrumentality of technology and innovation for coping with adaptation challenges in a developing country like India. As a natural continuation of our argument, the section that follows is devoted to the access to justice avenues that farmers may deploy in order to precipitate governmental measures supporting their participation in the program.

On the archipelago, annual demands for rice reach 60,000 tons per year, yet rice production generates only 22,000 tons per year, mainly due to low

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<sup>236</sup> Deryck O. Lodrick, *Andaman and Nicobar Islands*, ENCYC. BRITANNICA, <https://www.britannica.com/place/Andaman-and-Nicobar-Islands/People> (last updated Oct. 5, 2012).

<sup>237</sup> *Id.*; see also GOV'T OF INDIA PLANNING COMM'N, *supra* note 235, at 12–15.

<sup>238</sup> Gangaiah et al., *supra* note 9, at 179.

<sup>239</sup> R.K. Gautam et al., *Genetic Improvement of Field Crops for Higher Productivity in A & N Islands*, in INTEGRATED FARMING SYSTEMS FOR TROPICAL ISLANDS OF INDIA 44, 44 (Bandla Gangaiah & Sibnarayan Dam Roy eds., 2014).

<sup>240</sup> *Id.*; see also R.K. Gautam et al., *Identification of Salt Tolerant Varieties Through Farmer's Participation in Andaman & Nicobar Islands*, 19 J. ANDAMAN SCI. ASS'N 136, 136 (2014). After India's Supreme Court ordered the wood-based industry to shut down in 2003, there virtually exists no industry, hence the salience of agriculture for a living. See S.K. Zamir Ahmed et al., *Agricultural Technologies for Rural Prosperity of Island Farmers*, in INTEGRATED FARMING SYSTEMS FOR TROPICAL ISLANDS OF INDIA 167, 167 (Bandla Gangaiah & Sibnarayan Dam Roy eds., 2014).

productivity.<sup>241</sup> At an added cost, rice can be imported from India's mainland, but the islands' food production system is not sustainable.<sup>242</sup> Food security is provided for the most vulnerable through subsidized prices under the Public Distribution System and the Targeted Public Distribution System.<sup>243</sup> These systems, however, have been exposed as heavily flawed.<sup>244</sup> The question is whether existing land on the archipelago can be recovered from non-use, or used more effectively. With regard to land liable to be recovered from non-use, existing land in the archipelago lays barren due to previous flooding,<sup>245</sup> insufficient incentives<sup>246</sup> and climate change effects including rainfall variation, increasing temperatures and terrain salinity.<sup>247</sup> Terrain

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<sup>241</sup> Gautam et al., *supra* note 239, at 44.

<sup>242</sup> Compare the December 15, 2019 price of 0.10 kg of white rice in Kolkata (4.60 ₹), Delhi (6.41 ₹), and the Andaman and Nicobar Islands (7.00 ₹). *Compare Food Prices in Kolkata, India*, NUMBEO, <https://www.numbeo.com/food-prices/in/Kolkata>, with *Food Prices in Delhi, India*, NUMBEO, <https://www.numbeo.com/food-prices/in/Delhi>, and *Food Prices in Andaman Islands, India*, NUMBEO, <https://www.numbeo.com/food-prices/in/Andaman-Islands>.

<sup>243</sup> See *Introduction: Public Distribution*, MINISTRY OF CONSUMER AFFAIRS, FOOD & PUB. DISTRIB., <https://dfpd.gov.in/pd-Introduction.htm> (last updated Sept. 30, 2019) (discussing the Public Distribution System and the Targeted Public Distribution System). The system is jointly managed by the central and state governments through "fair price shops." Poorvi Chitalkar & Varun Gauri, *India: Compliance with Orders on the Right to Food*, in *SOCIAL RIGHTS JUDGEMENTS AND THE POLITICS OF COMPLIANCE: MAKING IT STICK* 288, 291 (Malcolm Langford et al. eds., 2019).

<sup>244</sup> Chitalkar & Gauri, *supra* note 243, at 291.

<sup>245</sup> The islands suffered from a swarm of aftershocks ensuing the great megathrust earthquake that occurred on December 26, 2004, with its epicenter west of Sumatra. Malik et al., *supra* note 234, at 47; see also Gautam et al., *supra* note 240, at 136. The earthquake's magnitude measured 9.4 on Richter scale and worsened the condition of the archipelago soil. See Akshaya Nayak et al., *Post Tsunami Changes in Soil Properties of Andaman Islands, India*, 170 ENVTL. MONITORING & ASSESSMENT 185, 185–86, 192 (2010). Besides the toll of human life, there appears to occur ongoing postseismic slip of the islands, in particular a subsidence along the eastern side. See P.C. Bandopadhyay & Andrew Carter, *Introduction to the Geology and Geomorphology of the Andaman-Nicobar Islands*, in *THE ANDAMAN-NICOBAR ACCRETIONARY RIDGE: GEOLOGY, TECTONICS AND HAZARDS* 9–18 (P.C. Bandopadhyay & Andrew Carter eds., 2017); see also John Paul et al., *Andaman Postseismic Deformation Observations: Still Slipping After All These Years?*, 102 BULL. SEISMOLOGICAL SOC'Y AMERICA 343, 343 (2012).

<sup>246</sup> Bina Agarwal & Ankush Agrawal, *Do Farmers Really Like Farming? Indian Farmers in Transition*, 45 OXFORD DEV. STUD. 460, *passim* (2017).

<sup>247</sup> Gangaiah et al., *supra* note 9, at 174. With regard to rainfall variation, the archipelago has experienced significant fluctuations both annual and monthly. *Id.* at 175. Similarly, the monsoon season has been delayed by one week both on the archipelago and the island. *Id.*; see also A. Velmurugan et al., *Climate Change & Nicobar Islands: Impacts and Adaptation Strategies*, 20 J. ANDAMAN SCI. ASS'N 7, 12 (2015). With regard to temperature increase, in the last decade (approximately 2005–15), the mean temperature of the archipelago capital, Port Blair, has increased by over 0.60° C, with wide fluctuations in maximum temperature from year to year. *Id.* at 7, 13; see also Gangaiah et al., *supra* note 9, at 175. Further challenges to crop yield are also found in insufficient surface water storage structures, and poor ground water quality.



salinity also affects land that has been devoted to agricultural rice production.<sup>248</sup> Land affected by salinity is known as degraded land<sup>249</sup> in that high levels of salt are coupled with a decrease in crop yields.<sup>250</sup> By focusing on terrain salinity,<sup>251</sup> we identified a program developing rice genotypes that produce high yields under salinity conditions.

The program was set in motion in 2006 by the Central Island Agricultural Research Institute (“CIARI”) in Port Blair, the capital city of the Andaman and Nicobar Islands.<sup>252</sup> CIARI is a publicly-funded research institute established by the Indian Council of Agricultural Research (“ICAR”).<sup>253</sup> Between 2009–13, a set of seven salt-tolerant varieties of rice seeds were first produced by CIARI.<sup>254</sup> These seeds are referred to as “nucleus seeds,” as they are 100% physically and genetically pure.<sup>255</sup> In the period between 2010–13, CIARI achieved two goals. First, it was able to propagate its nucleus seeds into eleven rice varieties called “breeder seeds” on CIARI premises, maintaining 100% physical and genetic purity.<sup>256</sup> Secondly, it engaged twenty “progressive” local farmers from twelve villages as producers of seeds for further distribution: “truthfully labelled seeds.”<sup>257</sup> The technology transfer was guided and supervised by a team of breeders, entomologists, pathologists, and

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*Id.* at 174; see also J.C. Dagar et al., *Climate Change vis-a-vis Saline Agriculture: Impact and Adaptation Strategies*, in INNOVATIVE SALINE AGRICULTURE 5, 21 (J.C. Dagar et al. eds., 2016).

<sup>248</sup> Subhasis Mandal et al., *Land Shaping Models for Enhancing Agricultural Productivity in Salt Affected Coastal Areas of West Bengal—An Economic Analysis*, 68 INDIAN J. AGRIC. ECON. 389, 391 (2013).

<sup>249</sup> *Id.*

<sup>250</sup> TIM G. BENTON ET AL., GLOB. FOOD SEC., ENVIRONMENTAL TIPPING POINTS AND FOOD SYSTEM DYNAMICS: MAIN REPORT 9 (2017), <https://www.foodsecurity.ac.uk/publications/environmental-tipping-points-food-system-dynamics-main-report.pdf> (recalling that “salting the earth” constituted a custom to permanently destroy an enemy in ancient times).

<sup>251</sup> The performance of rice crops is impacted by a host of factors, besides soil salinity, such as rainfall. Gautam et al., *supra* note 239; Gangaiah et al., *supra* note 9, at 174. Rainfall decreases the degree of soil salinity. See *id.* On wetlands in India, see Malik et al., *supra* note 234, at 73.

<sup>252</sup> SINGH ET AL., *supra* note 15, at 2.

<sup>253</sup> *About the Institute*, ICAR-CENT. ISLAND AGRIC. RESEARCH INST., <https://ciari.icar.gov.in/> (last visited Nov. 12, 2019).

<sup>254</sup> SINGH ET AL., *supra* note 15, at 3.

<sup>255</sup> *Id.* at 3–4. This is a case of traditional breeding, with no seed-terminator technology.

<sup>256</sup> *Id.* at 5. On the selection of these seeds, see Gautam et al., *supra* note 240, at 140.

<sup>257</sup> SINGH ET AL., *supra* note 15, at 6.

social scientists, with field support provided by a local office of the National Bank of Agriculture and Rural Development.<sup>258</sup> A total of 177 farmers, men and women, participated in the field days conducted under the program.<sup>259</sup> Once production ended, CIARI purchased the seeds from the farmers, and cleaned, packed and sold them back to the farmers at a nominal price, thus creating a “buyback system.”<sup>260</sup> A number of frontline demonstrations were conducted from 2010 until 2014 in 112 villages.<sup>261</sup> Findings have shown the superiority of the new high-yield varieties of rice compared to local varieties,<sup>262</sup> with an increase in yield of 31.25% in comparison with the traditional low-yielding rice varieties on the island.<sup>263</sup> The resulting economic return was on average 38.46% higher per hectare. The program was named the Seed Program,<sup>264</sup> hereinafter referred to as the “program” or the “resilient seed program.”

This program led to multiple benefits. First, the entrenched participatory mode reinforced the “confidence level” of farmers, who could assess the higher yield in their own fields.<sup>265</sup> Farmers were trained in sustainable seed production for long-term impacts in view of not only being part of the program but also more general sustainability training.<sup>266</sup> A total of 468 farmers were trained for program participation,<sup>267</sup> talks were held on TV and the radio<sup>268</sup> and a “total of 11.85 tons of truthfully labelled seeds” were distributed to the islands’ farmers between 2011 and 2015 with subsequent higher return in terms of yield and profits.<sup>269</sup> A total of 20.3

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<sup>258</sup> *Id.* at 2.

<sup>259</sup> *Id.* at 10.

<sup>260</sup> *Id.* at 8, 10.

<sup>261</sup> *Id.* at 12–14.

<sup>262</sup> *Id.* at 14.

<sup>263</sup> *Id.* at 19.

<sup>264</sup> *Id.* at 3. Provided the relevant data provided *supra*, the percentage was derived by the authors through a simple equation.

<sup>265</sup> *Id.* at 19.

<sup>266</sup> *Id.* at 20.

<sup>267</sup> *Id.* at 9.

<sup>268</sup> *Id.* at 10.

<sup>269</sup> P.K. Singh et al., *Quality Seed Production, Dissemination and Impact of High Yielding Varieties of Rice in Andaman and Nicobar Islands*, in *DECADE OF ICAR SEED PROJECT: RETROSPECT AND PROSPECT* 390, 391 (S. Rajendra Prasad et al. eds., 2015).

tons of seeds were produced across villages.<sup>270</sup> The spread of the program is also partially dependent on farmers' confidence, as some farmers have become Seed Ambassadors in order to testify to the benefits of the program.<sup>271</sup> Nonetheless, farmers still made use of their own seeds by "a substantial proportion."<sup>272</sup> Through the program, the rate of replacement of seeds increased from 1.5% to 5.3%,<sup>273</sup> yet such an increase has not been deemed sufficient to substantially substitute rice seeds on the island in order to cope with the salinity conditions of the soil.<sup>274</sup> The CIARI scientists involved in the project have pointed to the role of governmental authorities, in particular the Directorate of Agriculture, who are necessary to the process; they receive the breeder seeds from CIARI, multiply them at their farms and distribute them to the farmers.<sup>275</sup> We turn to the role of governmental authorities in the next section, which is devoted to the justice avenues that the farmers of the Andaman and Nicobar islands may access, supported by international law.

The program we describe is best referred to as climate-smart agriculture, a concept we introduced in Part I.B. In fact, in the areas where it was implemented, the program was able to transform and reorient the agricultural system to sustainably "support food security under the new realities of climate change."<sup>276</sup> It thus increased resilience, meaning the biophysical capacity to intensify or increase food production,<sup>277</sup> and reduced the GHGs emitted during the transport of imported rice to supplement that produced on the archipelago. It further enhanced other development goals such as adequate standards of living for farmers, who increased their economic return.<sup>278</sup> In particular, the program appears to comport with one of the adaptation strategies recommended for the archipelago: the modification of

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<sup>270</sup> Zamir Ahmed et al., *supra* note 240, at 169.

<sup>271</sup> SINGH ET AL., *supra* note 15, at 20.

<sup>272</sup> *See id.* at 17.

<sup>273</sup> *Id.*

<sup>274</sup> *Id.*

<sup>275</sup> *Id.*

<sup>276</sup> Leslie Lipper et al., *Climate-Smart Agriculture for Food Security*, 4 NATURE CLIMATE CHANGE 1068, 1068 (2014).

<sup>277</sup> *See supra* Part I.B. on the three indicators of resilience in food production systems.

<sup>278</sup> *See* FOOD & AGRIC. ORG. OF THE UNITED NATIONS, CLIMATE-SMART AGRICULTURE SOURCEBOOK 548 (2013) (discussing such criteria as part of the definition of smart agriculture).

existing agricultural systems and the possibility to harness mitigation co-benefits,<sup>279</sup> especially when this is attained by encouraging the active participation of local communities.<sup>280</sup>

The program is a success story and represents best practices. And yet, as with all adaptation measures, the success story does not imply that increasing salinity should be met solely with coping mechanisms, rather than substantially decreased GHG emissions. Failing to mitigate emissions is likely to lead to increased salinity conditions in the soil that may hinder the high yield assured by the program's seeds.<sup>281</sup> In fact, climate change will keep raising the salinity of the soil: it increases the temperature of both atmosphere and soil, leading to higher evaporation of water, which moves salt toward the surface layers.<sup>282</sup> *Moreover, higher yields under saline conditions is not the only feature that farmers wish to achieve.*<sup>283</sup> They also desire a certain *appearance, facility in the cutting process, high quality grains, and the decreased attraction of insects.*<sup>284</sup> *Furthermore, the program is illustrative of one possible intervention, whereas other climate resilience schemes for the islands' farming community have already been pointed out.*<sup>285</sup>

Assessment of the viability of seeds can be based on criteria beyond yield and profit, and the program itself engages with sustainability training for farmers. One can envisage other eco-agricultural features: for instance, specific techniques of farm pond and paddy-cum-fish models that have proved effective for the resilience of coastal areas against increased salinity.<sup>286</sup> *More generally, it is recognized that adaptation programs thrive in what we would call an "ecosystem" of reforms involving, for example, water management and land use techniques.*<sup>287</sup> Biodiversity protections should also be part of this ecosystem of reforms, grounded in local and

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<sup>279</sup> Velmurugan et al., *supra* note 247, at 16.

<sup>280</sup> *Id.* at 16–17.

<sup>281</sup> Gangaiah et al., *supra* note 9, at 179.

<sup>282</sup> *Id.*

<sup>283</sup> SINGH ET AL., *supra* note 15, at 5; *see also* Gautam et al., *supra* note 240, at 140 (discussing the selection of these seeds).

<sup>284</sup> Gautam et al., *supra* note 240, at 139.

<sup>285</sup> Gangaiah et al., *supra* note 9, at 175.

<sup>286</sup> Mandal et al., *supra* note 248, at 391. Yet, socio-economic constraints such as land configuration, soil quality, and financial incentives should also be taken into account. *See id.* at 397–401.

<sup>287</sup> For such techniques, *see* BENTON ET AL., *supra* note 250, at 9.

indigenous knowledge and participation.<sup>288</sup> Under no circumstances shall deforestation be encouraged, nor should the rich forestry of the islands be violated. The overall effects of integrating all these processes into one framework (integrated management) can be assessed by systems dynamics models,<sup>289</sup> which “reveal the dynamic changes, feedback, delay and other processes of a system” in terms of quantifiability and controllability.<sup>290</sup>

Arguably, it is not necessarily wise to encourage rice crops from a climate change perspective as they may not be suited to the Andaman and Nicobar Islands’ ecosystems,<sup>291</sup> and because rice paddies themselves have been deemed a source of methane, a greenhouse gas, for many years.<sup>292</sup> From a litigation perspective, however, it is improper to tentatively trigger a change in agricultural production and food consumption by failing to optimize the rice farming sector. Rather, policies creating and encouraging carbon sinks, for example through the growth of mangroves, may compensate for the externalities produced on the climate system by rice paddies. Nonetheless, it is still wise to suggest agricultural diversification when feasible.<sup>293</sup> The involvement of women farmers was stressed, yet no specific data were found on the actual number of women involved. Hence, the gender-inclusive component of the program can be boosted, given the key role played by women in the agricultural sector.<sup>294</sup>

Notwithstanding the possibility of its integration with further sustainability features, the program described has sustainably increased productivity by 31.25% in comparison with the traditional low-yielding rice varieties of the Andaman and

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<sup>288</sup> Such consideration is germane to Community Biodiversity Management, “a methodology for promoting conservation and the sustainable utilization of biodiversity at local level, with an emphasis on agrobiodiversity or plant genetic resources.” Pratap Shretha et al., *Community Biodiversity Management: Defined and Contextualized*, in COMMUNITY BIODIVERSITY MANAGEMENT PROMOTING RESILIENCE AND THE CONSERVATION OF PLANT GENETIC RESOURCES 19, 19 (Walter Simon de Boef et al. eds., 2013).

<sup>289</sup> Fu Jia Li et al., *A System Dynamics Model For Analyzing The Eco-Agriculture System With Policy Recommendations*, 227 ECOLOGICAL MODELLING 34, 34 (2012).

<sup>290</sup> *Id.* at 35.

<sup>291</sup> Malik et al., *supra* note 234, at 12. Settlers have come to the Andaman and Nicobar Islands from India’s mainland and have brought over crops and practices that are “not wholly suited” to the islands’ ecosystems. *Id.*

<sup>292</sup> K. Minami & H.U. Neue, *Rice Paddies as a Methane Source*, 27 CLIMATIC CHANGE 13, 13 (1994).

<sup>293</sup> Velmurugan et al., *supra* note 247, at 16.

<sup>294</sup> WORLD BANK ET AL., GENDER IN CLIMATE-SMART AGRICULTURE 1 (2015).

Nicobar Islands.<sup>295</sup> Moreover, it has made possible a roughly 38.46% higher economic return per hectare.<sup>296</sup> In light of these benefits, the program allows for a greater attainment of the right to food and the right to adequate standards of living for farmers on the archipelago. Moreover, it is instrumental to a non-chemical approach to agriculture.<sup>297</sup> Allowing for salinity-resistant seeds, the program has also offered an opportunity for farmers to adapt their crops to climate change and increase their overall resilience. The program would also curb emissions, thus mitigating greenhouse gases by decreasing the pollution generated by the importation of rice from India's mainland to the Andaman and Nicobar Islands. Such higher attainment is likely to occur, however, only when the program increases through public involvement. In view of this, we now showcase the instruments offered by international and national law in order to investigate what avenues are open to farmers who wish to secure access to justice mechanisms on the Andaman and Nicobar Islands.

#### IV. ACCESSING CLIMATE-SMART AGRICULTURE THROUGH INTERNATIONAL LAW: A CASE STUDY

##### A. Introduction

Among the challenges posed by climate change adaptation, communities on the archipelago of the Andaman and Nicobar Islands are most affected by terrain salinity.<sup>298</sup> In order to address this challenge, we consider a hypothetical case that the smallholder farmers of the archipelago, or representative NGOs, can bring against the appropriate governmental authorities to increase the diffusion of best practices for resilient rice production. At present, we identify such best practices in the resilient-seed program previously illustrated.<sup>299</sup> In the hypothetical case, petitioners would ask the court to mandate that governmental authorities expand the program into other areas of the archipelago, and maintain it where it is present. Such an administrative action would be coupled by the scientific assistance of CIARI, the

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<sup>295</sup> SINGH ET AL., *supra* note 15, at 19.

<sup>296</sup> *Id.* Provided the source data, the percentage was derived by the authors through a simple equation.

<sup>297</sup> See R.K. Gautam et al., *Genetic Improvement of Rice for Higher Productivity and Adaption to Climate Change in Andaman & Nicobar Islands, India—An Overview*, in CLIMATE CHANGE ADAPTION AND BIODIVERSITY: ECOLOGICAL SUSTAINABILITY AND RESOURCE MANAGEMENT I (Andaman Sci. Ass'n ed., 2016) (endorsing such an approach).

<sup>298</sup> See *supra* Part III.

<sup>299</sup> See *supra* Part III.

research institute that started the program. We refer to the hypothetical case as the “case study.”

The need for the case study emerges from the low-yield rice seeds currently used on the archipelago<sup>300</sup> and the lack of sufficient action on the part of governmental authorities.<sup>301</sup> India’s government approved the National Action Plan on Climate Change (“NAPCC”) in 2008.<sup>302</sup> However, two shortcomings are apparent in the NAPCC. First, it merely constitutes a policy or administrative scheme. Second, though a policy, it could in principle contribute to agricultural resilience under the national mission for sustainable agriculture and strategic knowledge to combat climate change,<sup>303</sup> yet, it has so far failed to do so. The NAPCC national mission on sustainable agriculture mentions the development of crop varieties, but includes only drought- and pest-resistant varieties,<sup>304</sup> whereas one of the most pressing challenges for food security and the livelihood of farmers on the archipelago is posed by soil salinity.<sup>305</sup> Moreover, the government is struggling to spend the funds allocated for this national mission.<sup>306</sup> With regard to the strategic knowledge to combat climate change, the NAPCC sheds light on the need to improve the understanding of ecosystem responses.<sup>307</sup> Still, it does not mention the research undertaken on resilient agricultural systems by state-funded research institutes, such as CIARI, which developed the resilient-seed program in the context of the archipelago’s ecosystems.<sup>308</sup> A further drive for the case study emerges from the fact that climate

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<sup>300</sup> See *supra* Part III.

<sup>301</sup> See *supra* Part III.

<sup>302</sup> See generally PRIME MINISTER’S COUNCIL ON CLIMATE CHANGE, GOV’T OF INDIA, NATIONAL ACTION PLAN ON CLIMATE CHANGE (2008).

<sup>303</sup> See *id.* at 35–36.

<sup>304</sup> *Id.* at 35.

<sup>305</sup> See Velmurugan et al., *supra* note 247, at 12.

<sup>306</sup> Vijeta Rattani et al., *India’s National Action Plan on Climate Change Needs Desperate Repair*, DOWN TO EARTH (Oct. 18, 2018), <https://www.downtoearth.org.in/news/climate-change/india-s-national-action-plan-on-climate-change-needs-desperate-repair-61884>.

<sup>307</sup> PRIME MINISTER’S COUNCIL ON CLIMATE CHANGE, *supra* note 302, at 36.

<sup>308</sup> See *supra* Part III.

change litigation has not yet reaped the fruits of climate-smart agriculture, even though climate change litigation has emerged in India.<sup>309</sup>

The present Part is premised on a number of assumptions and limitations. First, the best practices that we identify are just some of the possible climate-smart agriculture measures to help communities adapt to climate change. As we discussed previously, the program is not immune to some caveats.<sup>310</sup> Second, the resilient-seed program that is requested through litigation mirrors the experimentation already undertaken by CIARI on the archipelago, yet three further conditions should be either introduced, or clarified. Given the methane emissions of rice production, the resilient-seed program should be accompanied by the creation of carbon sinks, for example through the growth and maintenance of mangroves on the archipelago.<sup>311</sup> Moreover, women's participation should be encouraged and monitored to ensure that both women and men can equally benefit from any intervention carried out in the agricultural sector to tackle risks arising from climate change.<sup>312</sup> Furthermore, the resilient-seed program should take into account biodiversity indicators and endow the local communities with biodiversity management skills.<sup>313</sup>

### B. *The Procedural Prong: Jurisdiction and Standing*

The procedural prong of the access to justice, according to the distinction outlined previously,<sup>314</sup> consists of access to courts.<sup>315</sup> In light of our strategic evaluation, we point to the particular type of litigation that the case study would fall under and the standing, or *locus standi*, that it warrants. One of the most decisive aspects of this hypothetical case is jurisdiction, the choice of forum. Under Indian

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<sup>309</sup> See *Non-U.S. Climate Change Litigation: India*, SABIN CTR. FOR CLIMATE CHANGE LAW, <http://climatecasechart.com/non-us-jurisdiction/india/> (last visited May 5, 2020). There are only two cases contained in the Sabin Center's non-United States litigation chart. *Id.*; see Application Petition, Pandey v. Union of India et al. (National Green Tribunal Mar. 25, 2017), [http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2017/20170325\\_Original-Application-No.-\\_\\_\\_\\_-of-2017\\_petition-1.pdf](http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/non-us-case-documents/2017/20170325_Original-Application-No.-____-of-2017_petition-1.pdf); see also State of Himachal Pradesh, M.A. Nos. 389/2014, 1145/2015, 1250/2015, 324/2016 & 325/2016 (Nat'l Green Tribunal) (India). *But see* Rajamani, *supra* note 174 (identifying cases tangentially touching upon climate change matters).

<sup>310</sup> See *supra* Part III.

<sup>311</sup> See *supra* Part III.

<sup>312</sup> See *supra* Part III.; see also WORLD BANK ET AL., *supra* note 294, at 1.

<sup>313</sup> See *supra* Part III.

<sup>314</sup> See *supra* Part II.

<sup>315</sup> See *supra* Part II.



law, the forum that farmers or a representative NGO may turn to is the National Green Tribunal (“NGT”). Created in 2010, the NGT has the powers of a civil court and its jurisdiction spans the matters covered by seven major environmental laws.<sup>316</sup> The applicant in the hypothetical case study would have recourse to the NGT’s regional bench in Kolkata.<sup>317</sup>

Quite importantly in regard to our focus on access to justice, one of the main drivers underlying the establishment of the NGT was the implementation of the access to justice prong encased in Principle 10 of the Rio Declaration.<sup>318</sup> In terms of access to justice, the advantages of recurring to the NGT can be described as follows. First, the presence of experts on the NGT<sup>319</sup> makes it well placed to seize upon and evaluate the scientific and technical contours of the seed-resilient program. Moreover, among the legal sources available to the NGT are India’s constitutional law, the principle of sustainable development, the precautionary principle, and the polluter pays principle.<sup>320</sup> As we note below, India’s constitutional law provides an applicable legal basis for this case study. Similarly, it will be clear later that the applicability of the principles of sustainable development and precaution is particularly beneficial to the case study.<sup>321</sup> Even more importantly, the NGT is empowered to determine its procedures, including evidence, under the principles of “natural justice.”<sup>322</sup> Such circumstances increase the likelihood that the tribunal will streamline proceedings and exercise procedural fairness. The high status of the NGT can be inferred from the fact that its orders can only be challenged before the Supreme Court of India.<sup>323</sup> Moreover, the NGT has a wide leeway to shape remedies;

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<sup>316</sup> National Green Tribunal Act, 2010, No. 19, Acts of Parliament, 2010 (India). The seven environmental laws are: the Water (Prevention and Control of Pollution) Act, 1974; the Water (Prevention and Control of Pollution) Cess Act, 1977; the Forest (Conservation) Act, 1980; the Air (Prevention and Control of Pollution) Act, 1981; the Environment (Protection) Act, 1986; the Public Liability Insurance Act, 1991; and the Biological Diversity Act, 2002. GEORGE PRING & CATHERINE PRING, UNITED NATIONS ENV’T PROGRAMME, ENVIRONMENTAL COURTS & TRIBUNALS 34 (2016), <https://wedocs.unep.org/bitstream/handle/20.500.11822/10001/environmental-courts-tribunals.pdf?sequence=1&isAllowed=y>.

<sup>317</sup> The NGT is composed of a principal Delhi bench and four regional benches, and three additional circuit locations. *FAQs*, NAT’L GREEN TRIBUNAL, <https://greentribunal.gov.in/faqs> (last visited May 12, 2020).

<sup>318</sup> National Green Tribunal Act, pmbl.

<sup>319</sup> *Id.* § 4(1)(c); PRING & PRING, *supra* note 316, at 35.

<sup>320</sup> National Green Tribunal Act § 20; PRING & PRING, *supra* note 316, at 34.

<sup>321</sup> *See infra* Part IV.C.

<sup>322</sup> National Green Tribunal Act §§ 19(1)–(3).

<sup>323</sup> *Id.* § 22.

the only limit set forth in the NGT Act is that the matter be apt to be adjudicated.<sup>324</sup> The NGT has the power to adjudicate all seven environmental laws set forth in the NGT Act, which constitute its exclusive jurisdiction.<sup>325</sup> Moreover, applicants can easily gain *locus standi*.<sup>326</sup> Post-judgment enforcement, one of the predicaments of litigation centering on economic, social, and cultural rights,<sup>327</sup> is also a centerpiece of the NGT's regulation and practice. In fact, the NGT Act provides for sanctions in case the defendant, either private or public, does not comply with the NGT's decisions.<sup>328</sup>

Some disadvantages are nonetheless apparent. The seven environmental laws that circumscribe the NGT's jurisdiction are not particularly tailored to the situation of the farmers on the Andaman and Nicobar Islands.<sup>329</sup> The Environment Protection Act and Biological Diversity Act are only related in principle, as the first revolves around environmental pollution, rather than degradation, and the second is unnecessary for the hypothetical case as the main objective is not to foster biological diversity.<sup>330</sup> Moreover, mixed courts, such as the NGT, may also suffer from "technical" complexity, wanting to limit themselves to "technical" rulings. Nonetheless, these considerations do not sap the possibility for the NGT to be an extremely active and effective model for environmental tribunals.<sup>331</sup> It is also true that the interpretation that the NGT itself made of the Environment Protection Act in the only climate change case so far decided in India is quite broad and may also encompass the subject matter of the case study.<sup>332</sup>

An alternative to the NGT would be either the High Court of Kolkata or the Supreme Court of India. Both have writ jurisdiction, namely the jurisdictional power

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<sup>324</sup> *Id.* § 19(4)(k).

<sup>325</sup> *Id.* § 21.

<sup>326</sup> *Id.* § 18(2); see also Gitanjali Nain Gill, *Mapping the Power Struggles of the National Green Tribunal of India: The Rise and Fall?*, 2018 ASIAN J.L. & SOC'Y 1, 1, 9.

<sup>327</sup> Langford et al., *supra* note 160, at 3–4.

<sup>328</sup> National Green Tribunal Act §§ 26–28.

<sup>329</sup> On the adaptation challenges on the archipelago, see *supra* Part III.

<sup>330</sup> Compare generally Environment (Protection) Act, 1986, No. 29, Acts of Parliament, 1986 (India), with Biological Diversity Act, 2002, No. 18, Acts of Parliament, 2002 (India).

<sup>331</sup> PRING & PRING, *supra* note 316, at 35.

<sup>332</sup> State of Himachal Pradesh, M.A. Nos. 389/2014, 1145/2015, 1250/2015, 324/2016 & 325/2016 (Nat'l Green Tribunal) (India).

to adjudicate claims of fundamental rights violations. Moreover, they count on a long history of creative—and even activist—judgments, especially with respect to the right to food.<sup>333</sup> Even in light of the NGT Act, either the High Court of Kolkata or the Supreme Court could have jurisdiction. The NGT jurisdiction on the matters is unclear and the risk for applicants is that the NGT cannot provide an alternative and efficacious remedy. Even if it could provide an alternative and efficacious remedy, it would still be possible to access remedies through either the Supreme Court or the High Court so long as the dismissal of the case “is likely to result in a miscarriage of justice.”<sup>334</sup> It is not required that a “miscarriage of justice” can be proven, even in terms of probability.<sup>335</sup> The strongest grounds for writ jurisdiction is that the NGT Act does not clearly establish exclusive jurisdiction on matters such as the one at issue, and that writ jurisdictions are best placed to adjudicate allegations of fundamental rights violations, as in this case.

The “strategic” evaluation of jurisdiction choice is thus mixed: even though the NGT appears to be the “natural” forum where applicants can have their day in court, jurisdiction would still be problematic as the case study does not fit precisely into any of the seven environmental laws under the purview of the NGT. Recurring to the NGT would still be worth the risk if adjudication has a science-intensive approach, since the expert members of the NGT would be best placed to evaluate the feasibility and expansion of the resilient-seed program. The present case study, however, does not appear to be overly science-intensive, especially in consideration of the experimentation that has already been carried out by CIARI on the archipelago. It does not appear that the specifics of the case render the case factually disputed to the point of dissuading either the High Court or the Supreme Court from adjudicating the matter.<sup>336</sup> We thus exclude the NGT. Given our preference for writ jurisdiction, from this point we will refer to applicants-plaintiffs as petitioners.

We conclude that either the High Court of Kolkata or the Supreme Court provides a better forum for trying the case study. If petitioners’ resources are scarce, the Supreme Court should be chosen. Otherwise, first approaching the High Court and later the Supreme Court may offer a better chance for the farmers of the Andaman and Nicobar Islands to succeed in their suit. Under this second possibility,

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<sup>333</sup> Chitalkar & Gauri, *supra* note 243, at 288.

<sup>334</sup> *Ganga Retreat & Towers v. State of Rajasthan*, (2003) 12 SCC 91 (India).

<sup>335</sup> *See, e.g., id.*

<sup>336</sup> We would like to thank Professor Mahesh Menon for pointing out the connection between factual disputes and the lesser probability for writ jurisdiction to be established.

one hindrance is the status of the lower courts, who are often less courageous than the country's Supreme Court in shaping effective remedies. Considering our preference for writ jurisdiction, the case study falls under a particular type of rights-based litigation, Public Interest Litigation ("PIL"), which contributed to the fame, in India and abroad, of the Supreme Court of India<sup>337</sup> as well as to its influence on other South Asian jurisdictions.<sup>338</sup> PIL was foreshadowed in United States civil adjudication as "public law litigation" in a renowned article from 1976.<sup>339</sup> Its importance lies in shifting the scope of a lawsuit from the letter of the law to a scope shaped primarily by the court and parties, with a view to precipitate social change.<sup>340</sup> More generally, PIL has been seen as enhancing public participation by providing an arena for marginalized groups and interests.<sup>341</sup> PIL in India can be traced back to the late 1970s and early 1980s.<sup>342</sup> With reference to our case study, hinging on environmental matters, litigation can be also termed Public Interest Environmental Litigation ("PIEL").<sup>343</sup> The procedural effect of PIL and PIEL is to relax standing requirements to the point that courts grant standing to all "public-spirited citizens—both those wishing to espouse the cause of the poor and oppressed (representative standing) and those wishing to enforce performance of public duties (citizen

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<sup>337</sup> Michael G. Faure & A.V. Raja, *Effectiveness of Environmental Public Interest Litigation in India: Determining Key Variables*, 21 FORDHAM ENVTL. L. REV. 239, 239 (2010); Gitanjali Nain Gill, *Human Rights and the Environment in India: Access Through Public Interest Litigation*, 14 ENVTL. L. REV. 200, 200 (2012); Lavanya Rajamani, *Public Interest Environmental Litigation in India: Exploring Issues of Access, Participation, Equity, Effectiveness and Sustainability*, 19 J. ENVTL. L. 293, 293–94 (2007).

<sup>338</sup> JONA RAZZAQUE, PUBLIC INTEREST ENVIRONMENTAL LITIGATION IN INDIA, PAKISTAN AND BANGLADESH 2, 11 (2004).

<sup>339</sup> Abram Chayes, *The Role of the Judge in Public Law Litigation*, 89 HARV. L. REV. 1281, 1281 (1976). Some commentators see the origin of PIL in the landmark case of *Brown v. Board of Education*, 347 U.S. 483 (1954). See Helen Hershkoff, *Public Law Litigation: Lessons and Questions*, 10 HUM. RTS. REV. 157, 161 (2009). *But see id.* at 6 (describing the strategic use of litigation in the nineteenth and twentieth centuries); *but see also* David Sloss, *Polymorphous Public Law Litigation: The Forgotten History of Nineteenth Century Public Law Litigation*, 71 WASH. & LEE L. REV. 1757 (2014).

<sup>340</sup> See Chayes, *supra* note 339, at 1302 (listing distinctive traits of public law litigation); *see also* Hershkoff, *supra* note 339, at 7–11 (describing the theory and structure of public interest litigation).

<sup>341</sup> See generally Alain Touraine, *An Introduction to the Study of Social Movements*, 52 SOC. RES. 749, 769 (1985) (describing how marginalized groups are often required to fight for their rights in an elite-dominated society).

<sup>342</sup> Rajamani, *supra* note 174, at 11 (recalling *S.P. Gupta v. Union of India*, (1982) 2 S.C.R. 365 (India)).

<sup>343</sup> RAZZAQUE, *supra* note 338, at 1; *see also* Harold Hongju Koh, *Transnational Public Law Litigation*, 100 YALE L.J. 2347, 2347 (1991) (displaying the variant of transnational public law litigation).

standing).<sup>344</sup> PIL has also enabled courts to adopt a broader spectrum of remedies.<sup>345</sup> Especially in developing countries, PIL was in fact meant to facilitate access to justice.<sup>346</sup>

In the case study, centered on the enforcement of fundamental rights, access to the Kolkata High Court or the Supreme Court is indeed enabled by PIL. Both Article 226<sup>347</sup> and Article 32<sup>348</sup> of the Indian Constitution grant access to justice for the enforcement of fundamental rights. While Article 226 provides for access to the Kolkata High Court, Article 32 permits direct recourse to the Supreme Court. On the one hand, Indian courts have acknowledged the departure from a strict rule of *locus standi* applicable for private actions.<sup>349</sup> On the other, no “rigid litmus test” has emerged.<sup>350</sup> Therefore, standing here is highly likely but not ensured, and it would depend on the parties to the case study.

On this latter point, we identify as petitioners the archipelago farmers that are not yet part of the resilient-seed program or representative NGOs. So far, they appear to be well placed to request the diffusion of the resilient-seed program. With reference to defendants, we consider that climate-smart programs would be better coordinated at the level of the central Government of India in particular the Ministry of Environment, Forest and Climate Change, where they could be encased in the NAPCC. Moreover, the research institute that developed the resilient-seed program, CIARI, was founded by the Indian Council of Agricultural Research (“ICAR”), an autonomous organization under a governmental department, the Ministry of Agriculture, and the central government itself.<sup>351</sup> A further defendant would be the Food Corporation of India (“FCI”), which was established by legislation in 1964 in

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<sup>344</sup> Rajamani, *supra* note 174, at 11.

<sup>345</sup> Chitalkar & Gauri, *supra* note 243, at 293.

<sup>346</sup> Faure & Raja, *supra* note 337, at 248.

<sup>347</sup> INDIA CONST. art. 226, § 1 (adopted by the Constituent Assembly on Nov. 26, 1949 and into force on Jan. 26, 1950).

<sup>348</sup> *Id.* art. 32.

<sup>349</sup> Normwati Binti Hashim, *Moves Towards Progressive Legal Framework and Energetic Jurisprudential Behavioral on the Enforcement of Public Interest Litigation in the New Millennium*, 105 *PROCEDIA—SOC. & BEHAV. SCI.* 484, 487 (2013); *see also* Faure & Raja, *supra* note 337, at 249.

<sup>350</sup> Hashim, *supra* note 349, at 487.

<sup>351</sup> *About Us*, INDIAN COUNCIL OF AGRIC. RESEARCH, <https://icar.org.in/content/about-us> (last visited Nov. 12, 2019).

order to support the interests of farmers, distribute food grains, and maintain operational and buffer stocks of food grains for national food security.<sup>352</sup> The FCI was sued in the most important case on the right to food that has so far emerged in India's case law, which we consider further on in the course of this Article.<sup>353</sup>

As explained in the next sub-section, we argue that petitioners are in a position to require the extension of the resilient-seed program for the protection of their right to food and an adequate standard of living. Such farmers or NGOs are entitled to advocate for the farmers' right to food because within such a right is encompassed food availability and adequacy, or "the possibility of individuals to directly feed themselves from productive land or other natural resources."<sup>354</sup> More intuitively, petitioners would plead in court for the protection of the farmers' right to an adequate standard of living, which is warranted when individuals have sufficient means—including food—to sustain themselves and live with dignity. A further possibility could prove very useful for petitioners willing to bring the lawsuit on behalf of not only the current farming community, but also future generations of people living off the land on the Andaman and Nicobar Islands. The legal basis that would make such a possibility more tangible is the international environmental principle of intergenerational equity noted above.<sup>355</sup> In this fashion, the *Urgenda* court set forth the intergenerational principle in order to allow the plaintiff NGO to plead on behalf of future generations.<sup>356</sup> In the context of adjudication in Indian courts, the principle of intergenerational equity has risen to the status of an environmental principle within Indian law.<sup>357</sup> By applying the principle of intergenerational equity as one of both international law and Indian law, the relevant court is in a position to confer standing on present and future generations of farmers in the archipelago.<sup>358</sup>

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<sup>352</sup> *About Us*, FOOD CORP. OF INDIA, <http://fci.gov.in/aboutUs.php> (last visited Nov. 12, 2019).

<sup>353</sup> *PUCL v. Union of India*, Writ Petition (Civil) No. 196 (2001) (India) [hereinafter *PUCL*, Writ Petition]; see *infra* Part IV.C.

<sup>354</sup> See *supra* Part II.B.3 (referencing to the construction of the right to food laid down in the human rights framework).

<sup>355</sup> See *supra* Part II.B.4.b.

<sup>356</sup> Hof's-Gravenhage 9 oktober 2018, AB 2018, 417 m.nt. GA van der Veen, Ch.W. Backes (Staat der Nederlanden/Stichting Urgenda) (Neth.). This part of the judgment was neither repealed, nor confirmed on appeals.

<sup>357</sup> *State of Himachal Pradesh v. Ganesh Wood Products*, AIR 1996 SC 149, 159 (India).

<sup>358</sup> In *Ganesh Wood Products*, the principle of intergenerational equity did not serve the purpose of enhancing access to justice on behalf of future generations, yet such interpretation may follow from the openness of the Supreme Court of India to transnational judicial dialogue, for example, by reference to

Be that as it may, the issues that we identified with regard to the procedural prong of access to justice are premised on a number of limitations. In particular, many civil society actors in addition to farmers or representative NGOs are in a position to plead for the right to food of *all* peoples living on the archipelago.<sup>359</sup> Similarly, this applies to the right to an adequate standard of living, especially through farming, for *all* peoples living on the archipelago. Requests for the protection of one's right to an adequate standard of living are even more pressing for those farmers who had to leave the agricultural sector due to the impacts of the 2004 tsunami and climate change.<sup>360</sup> However, for reasons of feasibility, we restrain the scope of our case study to current farmers living off the land on the archipelago or representative NGOs.

### C. *The Substantive Prong: Effective Remedies*

#### 1. Introduction

The substantive prong of access to justice, according to the distinction outlined previously,<sup>361</sup> consists of access to effective remedies.<sup>362</sup> A more informed discussion can ensue from the partition of the rights at hand in the case study, the right to food and an adequate standard of living, and the requested remedies. As will become clear, the legal basis supporting the rights to be protected does not always coincide with, but is rather complemented by, the legal basis underpinning effective remedies.

#### 2. The Cause of Action

In our case study, farmers and NGOs on the Andaman and Nicobar Islands can easily reap the fruits of the "Rights Revolution" that occurred in India in the 1980s, when India's courts unleashed the justiciability of economic, social, and cultural rights.<sup>363</sup> Central to the Rights Revolution was Article 21 of India's Constitution

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cases from other jurisdictions. *See, e.g.,* Vellore Citizens Welfare Reform v. Union of India et al., (1996) 5 SCC 647 (India).

<sup>359</sup> For an example, see the Snahalaya Ashram charity, based in Port Blair (Andaman and Nicobar Islands), which includes access to food and sustainability within its mission. *See What We Do*, SNAHALAYA ASHRAM, <http://www.snahalayaashram.com/WhatWeDo.html> (last visited May 12, 2020).

<sup>360</sup> *See supra* Part III (discussing these impacts).

<sup>361</sup> *See supra* Part II.

<sup>362</sup> *See supra* Part II.

<sup>363</sup> Chitalkar & Gauri, *supra* note 243, at 292.

regarding the right to life.<sup>364</sup> Article 21 serves the purpose of the type of litigation that we put forward: it can expand the seed-resilient program to more areas, possibly the entire archipelago of the Andaman and Nicobar Islands. India's Supreme Court has interpreted Article 21 to encompass the right to livelihood,<sup>365</sup> which equates to the right to an adequate standard of living and the right to food.<sup>366</sup> The most important decision rendered by India's Supreme Court on the right to food and the right to livelihood is *People's Union for Civil Liberties v. Union of India and Others* ("PUCL"), where the contours and justiciability of these two fundamental rights were refined.<sup>367</sup> In *PUCL*, the Indian Supreme Court ruled that the duty to fulfill the right to food derived from the right to life, a duty that had been breached by the state.<sup>368</sup> In particular, the state had failed to implement food schemes and distribution in the context of starvation and risk thereof, despite the availability of grain stocks.<sup>369</sup> The court ordered interim measures consisting of a wide range of actions, including the implementation of the Famine Code, that the grain allocation for the food-for-work scheme be doubled, that financial support for existing food security schemes be increased, and other measures that supported vulnerable groups.<sup>370</sup> With reference to the right to livelihood, the *PUCL* interim orders recognized the right to an adequate means of living, and even the right to work, within the right to food.<sup>371</sup> Building on *PUCL*, the petitioners in the case study are in a position to argue that the right to food and nutritional security is not a matter of welfare policy, but rather a matter of constitutional rights.<sup>372</sup>

Regarding both the right to life and the right to livelihood, India's Supreme Court has not only expanded and articulated the implications of Article 21 of the Constitution. It has also interpreted the latter consistently with some of the directive

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<sup>364</sup> INDIA CONST. art. 21.

<sup>365</sup> *Olga Tellis v. Bombay Mun. Corp.*, AIR 1986 SC 180 (India).

<sup>366</sup> *Mullin v. Administrator*, (1981) 2 SCR 516, 529 (India).

<sup>367</sup> Lauren Birchfield & Jessica Corsi, *The Right to Life Is the Right to Food: People's Union for Civil Liberties v. Union of India & Others*, 17 HUM. RTS. BRIEF 15, 15 (2010); see also *Air India Statutory Corp. v. United Labour Union & Others*, AIR 1996 SC 645 (India).

<sup>368</sup> See *PUCL*, Writ Petition, *supra* note 353.

<sup>369</sup> See Birchfield & Corsi, *supra* note 367, at 15.

<sup>370</sup> See generally *PUCL*, Writ Petition, *supra* note 353.

<sup>371</sup> *Id.*; Chitalkar & Gauri, *supra* note 243, at 299.

<sup>372</sup> See *PUCL*, Writ Petition, *supra* note 353; Chitalkar & Gauri, *supra* note 243, at 297.



principles of India's Constitution, which were not meant to be enforceable.<sup>373</sup> In particular, the directive principle on the state's duty to ensure people's right to livelihood in Article 39(a) and the state's duty to raise the level of nutrition and the standard of living of its people in Article 47.<sup>374</sup>

Moreover, for the purposes of our case study, the legal content of the Constitution can be fleshed out by interpreting Article 21 through the lens of international law. Such an interpretive mechanism, as seen previously, is called the indirect application of international law, or the consistent interpretation of national law according to international law.<sup>375</sup> Besides featuring in landmark climate change cases worldwide since 2015,<sup>376</sup> the indirect application of international law can thrive in Indian courts in particular. In fact, the Supreme Court of India has recognized that all international legal norms to which India is bound can be enforced by Indian courts so long as they are in harmony with the spirit of the Constitution and do not conflict with the fundamental rights provisions provided therein.<sup>377</sup> India is party to all agreements previously considered under the climate change treaty regime and the human rights framework.<sup>378</sup> The provisions enshrined in India's constitution on the right to food and the right to an adequate standard of living can be supported by the human rights framework examined previously, specifically Article 11 of the ICESCR as construed by the CESCR Committee.<sup>379</sup>

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<sup>373</sup> Chitalkar & Gauri, *supra* note 243, at 297 n.19.

<sup>374</sup> The court applied Article 39(a) and Article 47 of the Constitution of India. *Id.*

<sup>375</sup> *See supra* Part II.

<sup>376</sup> *See supra* Part II.

<sup>377</sup> *Visaka v. State of Rajasthan*, AIR 1997 SC 3011 (India). The court explained the indirect application of international law as applicable within the Indian legal order. *Id.*; *see also* Nihal Jayawickrama, *India, in THE ROLE OF DOMESTIC COURTS IN TREATY ENFORCEMENT: A COMPARATIVE STUDY* 243, 246 (David Sloss ed., Cambridge Univ. Press 2009). Additionally, in this regard, *see* INDIA CONST. art. 51(c).

<sup>378</sup> India ratified the UNFCCC on November 1, 1993, accessed the Kyoto Protocol on August 26, 2002, and ratified the Paris Agreement on October 2, 2016. *See India*, UNITED NATIONS CLIMATE CHANGE, [https://unfccc.int/tools\\_xml/country\\_IN.html](https://unfccc.int/tools_xml/country_IN.html) (last visited Feb. 16, 2020). India accessed the ICESCR and ICCPR on April 10, 1979. *International Covenant on Economic, Social and Cultural Rights*, UNITED NATIONS, [https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=IV-3&chapter=4&clang=\\_en](https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-3&chapter=4&clang=_en) (last visited Feb. 16, 2020) (showing India accessed the ICESCR on April 10, 1979); *International Covenant on Civil and Political Rights*, UNITED NATIONS, [https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg\\_no=IV-4&chapter=4&clang=\\_en](https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=IV-4&chapter=4&clang=_en) (last visited Feb. 16, 2020) (showing India accessed the ICCPR on April 10, 1979).

<sup>379</sup> *See supra* Part II.B.3.

For its part, the international climate regime would also support the petitioners' claim. In fact, incorporating this concept for the first time, the Paris Agreement maintains that state parties should "respect, promote and consider their respective obligations on human rights."<sup>380</sup> Moreover, the PA specifically highlights "the fundamental priority of safeguarding food security and ending hunger, and the particular vulnerabilities of food production systems to the adverse impacts of climate change."<sup>381</sup> Such a recital is clearly tailored to the purposes of the litigation portrayed in this case study, and the PA's Preamble bears on the interpretation of the entire Agreement.<sup>382</sup>

### 3. The Effective Remedy

The type of remedy that petitioners can request varies. In order to restrict the scope of the analysis, we consider the common core of the remedy, its legal basis, and two modes for enforcing it. First, the common core of the remedy hinges on a request to the most appropriate court, as determined previously,<sup>383</sup> to issue a declaratory judgment and an order to the central government and the FCI. Declaratory judgments are the most typical type of relief in human rights adjudication.<sup>384</sup> In a declaratory judgment, the judge would establish that the right to an adequate standard of living and the right to food for the farmers who are not yet included in the resilient-seed project have been infringed due to the inaction or insufficient action by the government of India and the FCI in light of the impacts of climate change and IPCC projections of the long-lasting effects of the 2004 tsunami.<sup>385</sup> Yet, declaratory judgments often fall short of preventing further harm.<sup>386</sup> To avoid "empty" rulings, PIL and the specific case law developed by Indian courts are pivotal to petitioners' remedy. The order that the judge would issue in the case study may be laid out as follows. First, it would establish the necessity of countering the non-resilient circumstances characterizing rice production on the archipelago of the Andaman and Nicobar Islands. Second, it would compel the central government

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<sup>380</sup> U.N. Framework Convention on Climate Change, Adoption of the Paris Agreement, U.N. Doc. FCCC/CP/2015/L.9/Rev.1, annex (Dec. 12, 2015).

<sup>381</sup> *Id.* ¶ 9.

<sup>382</sup> *See supra* Part II.B.2.d.

<sup>383</sup> *See supra* Part IV.B.

<sup>384</sup> Duyck et al., *supra* note 110, at 202.

<sup>385</sup> *See supra* Part III.

<sup>386</sup> Duyck et al., *supra* note 110, at 202.

and the FCI to remediate the situation by expanding the resilient-seed program described previously.<sup>387</sup> In so doing, the food production system would be more resilient in terms of intensification and expansion,<sup>388</sup> and farmers would find a significant livelihood growing rice crops from the resilient seed. The community at large would be empowered to manage biodiversity through a participatory mode within which “Seed Ambassador” farmers are the centerpiece.<sup>389</sup> Such an extension of the program should be accompanied by scientific research on the factors that contribute to the resilience of the food system (at least at the regional level of the archipelago),<sup>390</sup> for instance a macro-level research project. The program extension should also be reinforced by ongoing updates and a close, feedback loop to monitor the effects of the diffusion of the program, constituting a micro-level research project. In this way, even unpredictable fallout from the project would be addressed head-on. Be that as it may, the choice of this particular program should not be carved in stone. Rather, petitioners may also ask the judge to require the government to improve the program.<sup>391</sup>

As a further measure within the ruling, the judge would require governmental authorities to evaluate the cost-effectiveness of remediating the soil in areas of the archipelago subject to agricultural use that have been submerged since the 2004 tsunami and those that have been abandoned due to salt water infiltration.<sup>392</sup> Those expanses of land lie unproductive, but could possibly be part of the resilient-seed program in a second phase following judicial review. The choice of cost-effectiveness as the most appropriate type of analysis to evaluate soil remediation measures springs from the application of the precautionary principle as formulated in the UNFCCC.<sup>393</sup> Pursuant to Article 3(3) of the UNFCCC, parties shall guarantee that “policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost.”<sup>394</sup> However, a conundrum may follow this judgment. Albeit cost-effective, soil remediation is not feasible

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<sup>387</sup> See *supra* Part III.

<sup>388</sup> See *supra* Part I (identifying the three indicators of resilience in food production systems).

<sup>389</sup> See *supra* Part III.

<sup>390</sup> Seckell et al., *supra* note 20 (advocating for nation-scale indicators of resilience).

<sup>391</sup> See *supra* Part III (detailing some of the possible modifications).

<sup>392</sup> See *supra* Part III.

<sup>393</sup> See *supra* Part II.B.

<sup>394</sup> UNFCCC, *supra* note 41, at art. 3(3).

given the strain on financial resources that governmental authorities are currently experiencing.<sup>395</sup> Further, expanding the program might ineffectively drain public resources. On the one hand, it appears that escalating the program is unlikely to be overly expensive as the program is partly based on a “buyback” scheme and has already been tested locally.<sup>396</sup> On the other hand, it should be recalled that, even when resources have proved inadequate, states parties should still ensure the widest possible enjoyment of the relevant rights.<sup>397</sup> A possible avenue may consist of international climate finance.

An understanding of the importance of climate finance has lately dawned upon the international community, and the PA offers a meaningful forum where developed states parties are under obligation to financially assist developing states parties with respect to both mitigation and adaptation,<sup>398</sup> and biennially report on such assistance.<sup>399</sup> Moreover, developed state parties shall provide information “on financial, technology transfer and capacity-building support provided” to developing states parties and the latter “should provide information on financial, technology transfer and capacity-building support needed and received.”<sup>400</sup> Such capacity-building is an evident feature of the common but differentiated responsibilities and respective capabilities principle.<sup>401</sup> More tangibly, it is important to note here the recent financing of climate change-resilient seeds at the International Rice Research Institute (“IRRI”).<sup>402</sup> In fact, interest in this area of research is mounting internationally. A further possibility would be for India’s government to request international aid under the model of the Pacific Adaptation to Climate Change (“PACC”) initiative, which, *inter alia*, has a resilient agriculture program on

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<sup>395</sup> *Cf.* *Ratlam Mun. Council v. Vardhichand & Others*, AIR 1980 SC 1622 (India) (“The law will relentlessly be enforced and the plea of poor finance will be poor alibi when people in misery cry for justice”).

<sup>396</sup> *See supra* Part III.

<sup>397</sup> *See supra* Part II.B.3.

<sup>398</sup> Paris Agreement, *supra* note 43, art. 9(1); *see also id.* art. 9(7) (identifying the type of information that developed states parties are called on to convey to developing states parties).

<sup>399</sup> *Id.* art. 9(5).

<sup>400</sup> *Id.* arts. 13(8), 13(9).

<sup>401</sup> *See supra* Part II.B.

<sup>402</sup> THOMAS REUTERS FOUND., *World’s Largest Rice Gene Bank Secures Funding to Fight Climate Change*, ECO-BUS. (Oct. 16, 2018), [www.eco-business.com/news/worlds-largest-rice-gene-bank-secures-funding-to-fight-climate-change/](http://www.eco-business.com/news/worlds-largest-rice-gene-bank-secures-funding-to-fight-climate-change/).

Samoa.<sup>403</sup> The legal basis underpinning such a remedy is Article 4(1) of the UNFCCC requiring all States Parties to adopt measures to “[f]ormulate [and] implement . . . programs containing . . . measures to facilitate adequate adaptation to climate change.”<sup>404</sup> Emphasis is placed on the duty of states that are parties to the UNFCCC to “develop and elaborate appropriate and integrated plans for coastal zone management, water resources and agriculture.”<sup>405</sup> As previously explained, the stringency of such duties is supported by the use of the auxiliary verb “shall” in the text of the UNFCCC, setting forth a legal obligation on all parties to develop adaptation policies. Further, short of an explicit reference to adaptation, the UNFCCC nonetheless requires states to promote “the development, application and diffusion, including transfer, of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases . . . in all relevant sectors, including . . . agriculture.”<sup>406</sup> Such a provision fully applies to our case study.

In the case study, we have criticized the current need to largely import rice from the mainland to the archipelago, which increases GHG emissions and stifles local solutions to food security. In light of the provisions set forth in the UNFCCC, the resilient-seed program is poised to facilitate the mitigation co-benefits of adaptation by diffusing climate-smart agricultural technology. This type of remedy correlates to a further provision, Article 4(1)(f) of the UNFCCC, which was triggered in *Earthlife*: pursuant to which states are to take climate change considerations into account in their social, economic, and environmental policies and actions.<sup>407</sup> The government mandate would thus be framed within the social, economic, and environmental policies and actions for the Andaman and Nicobar Islands.

It does not seem that the Kyoto Protocol adds a further basis for the UNFCCC provisions.<sup>408</sup> Yet, the obligation that it lays out in Article 10 infuses UNFCCC obligations with two procedural duties: the implementation and regular update of

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<sup>403</sup> *PACC Country Projects*, PAC. REG'L ENVTL. PROGRAMME, <https://www.sprep.org/node/946> (last visited Nov. 14, 2018).

<sup>404</sup> UNFCCC, *supra* note 41, art. 4(1)(b).

<sup>405</sup> *Id.* art. 4(1)(e).

<sup>406</sup> *Id.* art. 4(1)(c).

<sup>407</sup> *See supra* Part II.B.2.b.; *see also* UNFCCC, *supra* note 41, art. 3 (proposing that policies and measures should take into account socio-economic contexts).

<sup>408</sup> *See supra* Part II.B.2.

adaptation programs.<sup>409</sup> Both duties are particularly relevant in the context of the case study. In fact, the remedy consists of expanding the resilient-seed project only so long as it is still feasible and can be classified as a best practice within the context of the archipelago. One of the more extensive specifications of the adaptation obligations can be found in the PA.<sup>410</sup> The PA does not mince words on resilience, which features largely in the Preamble and as early in the operative section as Article 2(1)(b).<sup>411</sup> This provision embeds the importance of the mitigation co-benefits ensuing from adaptation measures further emphasized in Article 4(7) and Article 7(4) and relates climate resilience especially to the need “not to threaten food production.”<sup>412</sup> The resilient-seed program would accord not only with this latter objective, but also with the obligation that adaptation measures protect “people, livelihoods and ecosystems,” especially in light of “the urgent and immediate needs” of those developing state signatories that are most vulnerable to climate change and its effects,<sup>413</sup> such as India.<sup>414</sup>

The key contribution that the resilient-seed program can make—not only to food security, livelihoods, and ecosystems within the archipelago, but also for the state’s compliance with international law—is that it operationalizes the obligation on all parties to the PA to “engage in adaptation planning processes and the implementation of actions, including the development or enhancement of relevant plans, policies and/or contributions.”<sup>415</sup> Within its adaptation framework, each state may, for instance, engage in “the process to formulate and implement national adaptation plans” to establish “nationally determined prioritized actions” and to build “the resilience of socioeconomic and ecological systems.”<sup>416</sup> The resilient-seed program emerges as one of the possible actions to be prioritized within India’s adaptation plan in order to build the resilience of the socioeconomic and ecological systems of the Andaman and Nicobar Islands.<sup>417</sup> The technology-intensive character

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<sup>409</sup> Kyoto Protocol, *supra* note 42, at art. 10; *see also supra* Part II.B.2.c.

<sup>410</sup> *See supra* Part II.B.2.d.

<sup>411</sup> Paris Agreement, *supra* note 43, at art. 2(1)(b).

<sup>412</sup> *Id.* art. 4(7), 7(4); *see also supra* Part II.B.2.d.

<sup>413</sup> Paris Agreement, *supra* note 43, art. 7(2); *see also supra* Part II.B.2.d.

<sup>414</sup> *See supra* Part I.

<sup>415</sup> Paris Agreement, *supra* note 43, art. 7(9); *see also supra* Part II.B.2.d.

<sup>416</sup> Paris Agreement, *supra* note 43, art. 7(9).

<sup>417</sup> *See supra* Part III.

of the resilient-seed program is especially germane to one of the prompts embedded in the PA in the context of adaptation. A technology-intensive, long-term action for adaptation such as the one described herein would find support in the state's "long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change."<sup>418</sup> The participative and gender-sensitive characteristics of the resilient-seed program, as modified in our proposal,<sup>419</sup> ally with the obligation set forth in the PA under which adaptive actions should be "country-driven, gender-responsive, [and] participatory."<sup>420</sup> Considering that the program has been created by CIARI, a reputed scientific institution, it can fulfill the obligation by which adaptation measures should be "based on and guided by the best available science."<sup>421</sup>

Even though the legal basis for the remedy to be shaped by the court in the case study is grounded predominantly in the international climate change regime, the human rights framework makes the order a "duty" in light of the positive obligations of states. As previously considered, state parties to the ICESCR are under the obligation to respect, protect and fulfill the right to food enshrined in Article 11 of the ICESCR by ensuring both its availability and accessibility.<sup>422</sup> This obligation is further reinforced by the cross-reference within the PA to human rights obligations bearing upon states.<sup>423</sup> For the purposes of the case study, the availability of food, namely the possibility for individuals to directly feed themselves from productive land, for which all states parties to the ICESCR should allow. With regard to the right to livelihood, which the ICESCR similarly recognizes in Article 11, states are required to be proactive in granting people's access to resources enabling their livelihood.<sup>424</sup>

A further legal basis for the remedy that we put forward in the case study can be found in the international environmental precautionary principle, which came to the fore in the case law of India's Supreme Court as an obligation for the state government and statutory authorities to "anticipate, prevent and attack the causes of

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<sup>418</sup> Paris Agreement, *supra* note 43, art. 10(1); *see also supra* Part II.B.2.d.

<sup>419</sup> *See supra* notes 417–20 and accompanying text.

<sup>420</sup> Paris Agreement, *supra* note 43, art. 7(5); *see also supra* Part II.B.2.d.

<sup>421</sup> Paris Agreement, *supra* note 43, art. 7(5); *see also supra* Part II.B.2.d.

<sup>422</sup> *See supra* Part II.B.3.

<sup>423</sup> *See supra* Part II.B.3.

<sup>424</sup> *See supra* Part II.B.2.d.

environmental degradation” by way of environmental measures.<sup>425</sup> The remedy provided in the case law appears precautionary in that soil degradation on the archipelago poses threats of serious and irreversible damage, some of which is already scientifically certain, while some is still scientifically uncertain.<sup>426</sup> Still, in the formulation of the precautionary principle fleshed out in Indian case law and international law, the lack of scientific certainty should not be used as a grounds for postponing adaptation measures.<sup>427</sup> Deploying the precautionary principle to support the measures required of the government would also facilitate the procedural position of petitioners as they would not need to prove all detrimental effects of the government’s inaction on the soil, food security, and their livelihood. Rather, the government would shoulder the burden of proof with regard to the sufficiency of its action.<sup>428</sup>

The specific demand of remediating soil degradation harkens back to the principle of sustainable development as interpreted by the Supreme Court of India. Sustainable development is, in fact, a process encompassing the remediation of the damaged environment.<sup>429</sup> Moreover, the participatory and educational features of the resilient-seed program would be especially relevant to the constituent elements of the sustainable development principle, as hammered out by India’s Supreme Court. In the Supreme Court’s words, “[n]o government can cope with the problem of environmental repair by itself alone; peoples’ voluntary participation in environmental management is a must for sustainable development.”<sup>430</sup> In this line of reasoning, we believe that the resilient-seed program offers concrete incentives for voluntary participation. Furthermore, the program is poised to offer a practical toolkit for the local population’s stewardship of natural resources for future generations (intergenerational equity). India’s Supreme Court has applied the precautionary principle and the principle of sustainable development, including intergenerational equity, as principles of customary international law and national

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<sup>425</sup> *Vellore Citizens Welfare Reform v. Union of India et al.*, (1996) 5 SCC 647 (India).

<sup>426</sup> *See supra* Part III.

<sup>427</sup> *Vellore Citizens*, 5 SCC 647 (referencing no specific adaptation measures, but rather pointing to environmental measures in general); *see UNFCCC, supra* note 41, art. 3(3) (exemplifying this formulation of the precautionary principle in the international climate change regime).

<sup>428</sup> *See Vellore Citizens*, 5 SCC 647 (explaining that the reversal of the burden of proof is more of a “creation” of national courts rather than international law); *see also Pulp Mills on the River Uruguay (Arg. v. Uru.)*, Judgment, 2010 I.C.J. Rep. 14, ¶ 164 (Apr. 20) (against the reversal of the burden of proof).

<sup>429</sup> *See Vellore Citizens*, 5 SCC 647.

<sup>430</sup> *Karnataka Indus. Areas Dev. Bd. v. Kenchappa & Others*, AIR 2006 SC 2038 (India).



law,<sup>431</sup> pursuant to the approach previously examined, *i.e.*, the indirect application of international law.<sup>432</sup>

As to the modes of implementation, we put forward two models. The first is molded on *Leghari*, the climate change case in Pakistan referenced previously,<sup>433</sup> while the latter builds on *PUCL*. In *Leghari*, the Green Bench of Lahore's High Court—relying on a variety of legal bases including constitutional law, the precautionary principle, equity, and the sustainable development principle<sup>434</sup>—established a Climate Change Commission (“CCC”).<sup>435</sup> The CCC consisted of thirty members—a lawyer as its chair, scientific experts, the highest ranking government functionaries, and representatives of civil society, universities and the media—who would coordinate and contribute to “mobilizing the government machinery.”<sup>436</sup> Established in September 2015, the CCC was dissolved only in January 2018, after a number of interim orders.<sup>437</sup> Its mission was over: the CCC had mobilized the governmental machinery for 66.11% of the priority actions for adaptations set forth in Pakistan's climate change implementation framework.<sup>438</sup> To gradually remove the fully-fledged environmental control held by the Pakistani government in climate matters, the Green Bench established a Standing Committee and nominated as its chair the previous chair of the CCC.<sup>439</sup>

Similar to the enforcement model deployed in *Leghari*, the competent court in the case study could summon legal experts, the scientists involved in the resilient-seed program at CIARI, other scientific experts, the highest ranking governmental

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<sup>431</sup> See *Vellore Citizens*, 5 SCC 647; see also *Jagannath v. Union of India & Others*, (1997) 2 SCC 87 (India) (recognizing intergenerational equity's customary status due to its connection with sustainable development).

<sup>432</sup> See *supra* Part II.A.

<sup>433</sup> See *supra* Part II.A.

<sup>434</sup> See *Leghari v. Pak.*, (2015) W.P. No. 25501/2015 (Lahore High Ct.) ¶ 7 (Pak.).

<sup>435</sup> See *id.* ¶ 8.

<sup>436</sup> *Id.* ¶ 7; see also Parvez Hassan, *Judicial Commissions and Climate Justice in Pakistan* 10, 15–16 (Feb. 26, 2018) (unpublished conference paper), [https://www.iucn.org/sites/dev/files/content/documents/2018/parvez\\_hassan\\_judicial\\_commissions\\_and\\_climate\\_justice\\_in\\_pakistan.pdf](https://www.iucn.org/sites/dev/files/content/documents/2018/parvez_hassan_judicial_commissions_and_climate_justice_in_pakistan.pdf). The Commission is divided into six sub-committees and all CCC members worked on a pro-bono basis. *Id.* at 8, 16.

<sup>437</sup> *Leghari*, W.P. No. 25501/2015 ¶ 24 (2018) (dissolving the CCC).

<sup>438</sup> *Id.* ¶ 18.

<sup>439</sup> Hassan, *supra* note 436, at 13.

functionaries, as well as representatives of civil society, universities, and the media. By way of interim orders, the court would supervise the expansion of the program and consider the remediation of submerged soil. The commission would be dissolved once the program had spread to a number of locations sufficient to strengthen the resilience of the socio-economic and ecological systems of the archipelago, but not necessarily to the point of self-sufficiency. The ultimate extension of the program would largely depend on biospheric integrity and the result of the research projects put forward at the micro- and macro-level.

Building on *PUCL*, this case study's proposed enforcement model would rest on the appointment of two commissioners tasked with monitoring and reporting on the implementation of the court's orders.<sup>440</sup> Monitoring would include an analysis of the available data, the receipt and evaluation of complaints from grassroots organizations, and the establishment of inquiry commissions.<sup>441</sup> In both proposed enforcement models, best practice would be determined within the commission, or among commissioners, by consensus.<sup>442</sup> For both models of enforcement, the post-judgment involvement of the court would be guaranteed by interim orders,<sup>443</sup> as well as the ability to open *suo moto* proceedings in cases of non-compliance.<sup>444</sup> For both models, the main tenet would be to foster a process of communicative, non-adversarial rationality,<sup>445</sup> encouraging a serious governmental response, coordination among different public entities, and exposing governmental bodies to specific types of knowledge.<sup>446</sup> Such a participative process is particularly beneficial to the effectiveness of PIL. In fact, "[t]he enforcement of social and economic rights typically requires a complex support system beyond the litigation itself," including branches of government and civil society.<sup>447</sup>

Legal and other factors may affect the enforcement of the decision. With regard to legal factors, clarity of the judgments and the legitimacy of the process play a crucial role. The clearer, more specific, and practical the decision and subsequent

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<sup>440</sup> Chitalkar & Gauri, *supra* note 243, at 298.

<sup>441</sup> *Id.* at 298–99.

<sup>442</sup> Hassan, *supra* note 436, at 16.

<sup>443</sup> On *PUCL v. Union of India*, see Chitalkar & Gauri, *supra* note 243, at 299.

<sup>444</sup> *Id.* at 303. This is considered the direct approach to compliance monitoring. See *id.* at 302–03.

<sup>445</sup> *Id.* at 300; see also Hassan, *supra* note 436, at 5.

<sup>446</sup> Chitalkar & Gauri, *supra* note 243, at 300; see also Hassan, *supra* 435, at 15–16.

<sup>447</sup> Chitalkar & Gauri, *supra* note 243, at 304.

orders are, the more likely there will be compliance.<sup>448</sup> Considering that in both of the enforcement models described herein the court would rely on private and public actors, as well as on its own enforcement mechanisms, the activity of the court may be perceived as particularly legitimate.<sup>449</sup> With respect to non-legal factors, a variable that would be decisive for the effectiveness of the case study is the economic and political environment of India.<sup>450</sup> The visibility of several issues (*e.g.*, the high price of rice and climate adaptation challenges) would make it more difficult for governmental authorities to ignore the orders.<sup>451</sup> Considering the general outlook predicted for malnourishment, demographic booms, and climate adaptation challenges discussed previously,<sup>452</sup> it does not appear outlandish that a similar program may find support at the economic and political levels. Looking back on the lessons of the past, the success of India's PIL on the right to food was also due to the prevailing economic and political environment in India at the time of the rulings.<sup>453</sup>

In addition to the political and economic environment, support from civil society is of utmost importance. Indian PIL on the right to food has been particularly successful on account of the campaign mounted through "public hearings, rallies, action-oriented research, media advocacy and lobbying of members of parliament."<sup>454</sup> Moreover, civil society is well placed to verify the enforcement of legal decisions and require information (*e.g.*, on the basis of the 2005 Right to Information Act). In both enforcement models, either by the establishment of a commission or the appointment of two commissioners, the main tenet is that environmental *procedural* rights shall be preserved. Such a tenet corresponds to Article 21 of India's Constitution, from which the rights to information and community participation for the protection of the environment and human health also flow.<sup>455</sup> Either enforcement mode may count on Article 141 of the Indian

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<sup>448</sup> *Id.* at 302.

<sup>449</sup> *Id.*; *cf.* Gill, *supra* note 337, at 3–4 (explaining that criticism has swept the NGT's decisions).

<sup>450</sup> For this factor in *PUCL*, see Chitalkar & Gauri, *supra* note 243, at 306–07.

<sup>451</sup> *Id.* at 302; see also *supra* Part III (detailing the archipelago's adaptation challenges).

<sup>452</sup> See *supra* Part I.

<sup>453</sup> For an explanation of how the economic and political environment factored in under the *PUCL* case law, see Chitalkar & Gauri, *supra* note 243, at 306–07.

<sup>454</sup> *Id.* at 305.

<sup>455</sup> Research Found. for Sci. Tech. & Nat. Res. Policy v. Union of India, Writ Petition (Civil) No. 657 (2005) (India).

Constitution, which provides that any law declared by the Supreme Court shall be the law of the land,<sup>456</sup> including *obiter dicta* and interim orders.<sup>457</sup> The general respect for the Supreme Court has also attained the status of a social norm.<sup>458</sup> Moreover, failing to enforce the order may expose defendants to contempt of court, which is still a deterrent that encourages judicial enforcement in India.<sup>459</sup>

Either enforcement mode necessarily suffers from some limitations. In *Leghari*, the CCC constituted by the judge was disassembled once most priority actions had been addressed.<sup>460</sup> Even though the judge established a further body to smooth the transition of full environmental competence to the government, no circumstance warrants effective action on the part of the governmental authorities in Pakistan. With regard to *PUCL*, the ruling itself did not achieve wholly satisfactory levels of enforcement, as results have varied across the type of food programs and across states.<sup>461</sup> In our case study, the effectiveness of the remedy may be reduced by the need to incentivize farmers to voluntarily partake in experimentation. Furthermore, the case study would benefit from a consideration of whether the involvement of the local government of the Andaman and Nicobar Islands would produce the best remedy, or whether such involvement may make coordination more difficult.

#### 4. Preliminary Conclusions

The case study that we have described is meant to precipitate adaptive measures in the Andaman and Nicobar Islands. In particular, the action required from the competent court would be based on both national and international law. We argue that international law is poised to facilitate access to justice for individuals and NGOs. The previous discussion shows that, as opposed to the procedural prong, the substantive prong of this access to justice would substantially benefit from the indirect application of international law in Indian courts. In fact, several international legal provisions appear to buttress the remedy requested. We identified such applicable international law provisions within the international climate change regime, the human rights framework, and international environmental law principles—in particular the principles of precaution, intergenerational equity, and sustainable development. The measures ensuing from the judgment would thus

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<sup>456</sup> INDIA CONST. art. 141.

<sup>457</sup> Faure & Raja, *supra* note 337, at 282.

<sup>458</sup> *Id.* at 283.

<sup>459</sup> *Id.* at 282.

<sup>460</sup> *Leghari v. Pak.*, (2015) W.P. No. 25501/2015 (Lahore High Ct.) (Pak.).

<sup>461</sup> Chitalkar & Gauri, *supra* note 243, at 299–300.

follow as precautionary measures for the sustainable development of smallholder farmers living on the Archipelago. The order requested as a relief could be enforced by establishing a commission, in the mold of *Leghari*. Alternatively, it may be implemented by appointing two commissioners in charge of monitoring and ensuring the enforcement of the judgment by reporting back to the court, within the mold provided by the landmark *PUCI* judgment on the right to food, first decided by India's Supreme Court in 2001. Both models warrant the post-judgment involvement of the court.

While this is only one illustration of the possible adaptation measures underpinned by the international climate change regime, human rights law and international environmental principles, the case study offers the vantage point of combining practice and theory to provide a blueprint for how access to justice can precipitate climate-smart agriculture.

## V. GENERAL CONCLUSIONS

The previous discussion has offered only a glimpse of the legal infrastructure that individuals and NGOs may rely on in order to protect their livelihoods and the environment. We have put forward a hypothetical case that smallholder farmers may file in India's courts to counter the degradation and lack of adequate food resources in the Andaman and Nicobar Islands, based on both national and international law. Inspired by a recent strand of climate change litigation, this "mixed fuel" of legal sources shows promise to increase the legitimacy of climate change regulation, and democratic participation to its enforcement.

It is difficult to predict all the possible benefits that might follow from this climate litigation case. Still, it is possible to aver that the legal action at hand could spearhead the access to justice for adaptation measures to combat climate change, in terms of both access to courts and effective remedies. First, national litigation based on international law may be one of the few avenues to enforce international law. In fact, the international climate regime is defective in terms of enforcement because adaptation is mandated but must not be compulsorily communicated in conjunction with the NDCs.<sup>462</sup> Until the "Paris rulebook" is finalized and the Adaptation Committee has developed further guidelines, it is uncertain how adaptation actions should be reported.<sup>463</sup> Therefore, this type of litigation would be particularly

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<sup>462</sup> Paris Agreement, *supra* note 43, art. 7(2), (8); *see also supra* Part II.B.2.d.

<sup>463</sup> Paris Agreement, *supra* note 43, art. 13(8) ("Each Party should also provide information related to climate change impacts and adaptation under Article 7, as appropriate").

beneficial to the effectiveness of the international legal regime by bolstering the decentralized enforcement of international law in climate change matters by courts. Moreover, access to justice will depend on the very benefits of the program, which is poised to sustainably increase productivity, adaptation to climate change, mitigation of GHGs, and overall resilience.<sup>464</sup> Moreover, this type of litigation may discourage claims based on loss and damages, which, albeit meritorious, are more oriented to past wrongs than future “fixes,” and fall outside the realm of Article 8 of the PA. In fact, the Conference of the Parties Decision adopting the PA excludes losses and damages under Article 8 as grounds for liability or compensation.<sup>465</sup> Similarly, this type of litigation would be an alternative to insurance: on the one hand, it is not easy to tailor climate insurance to the needs of the poorest individuals. On the other hand, “many of the most damaging aspects of climate change are too costly to be insurable.”<sup>466</sup>

Some limitations to the study should be acknowledged. The resilient-seed program portrayed within is only one of the possible strategies to counter soil salinity, even though it has been tested locally and provides a good first step. Moreover, it remains feasible that rural communities may attain access to justice by the sole application of national law, absent the indirect application of international law in national courts. Furthermore, this type of judicial involvement for adaptation programs may be dubbed “executive judicial activism,” which occurs in decisions concerning PIL when a court “effectively takes the place of either politicians or bureaucrats”<sup>467</sup> by “executing the law.”<sup>468</sup> One of the objections in the past to such types of litigation has been that judicial involvement to the point of “activism” lowers the usefulness of an efficient bureaucracy.<sup>469</sup> It can also undermine trust in the government.<sup>470</sup> What is also true is that endless judicial oversight is not sustainable given the number of PIL cases filed in India’s courts.<sup>471</sup> These criticisms have also

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<sup>464</sup> See *supra* Part III.

<sup>465</sup> Adoption of the Paris Agreement, *supra* note 379, § 3 ¶ 52.

<sup>466</sup> SURYAPRATIM ROY, S. AFR. INST. OF INT’L AFFAIRS, FROM ‘CROWDING OUT TO CROWDING IN’: TOWARDS AN INSTITUTIONAL ANALYSIS OF ADAPTATION FUNDS 13 (2012).

<sup>467</sup> Faure & Raja, *supra* note 337, at 259.

<sup>468</sup> *Id.* at 273.

<sup>469</sup> See generally Rajamani, *supra* note 337; see also Faure & Raja, *supra* note 337, at 289.

<sup>470</sup> Rajamani, *supra* note 337, at 319.

<sup>471</sup> *Id.* at 315; see also Faure & Raja, *supra* note 337, at 266–68 (outlining further shortcomings of PIL in India).

been raised to the remedy hammered out in a non-PIL class action case: *Urgenda*.<sup>472</sup> Certain authors have deemed these types of remedies a form of judicial activism that contradicts the doctrine of the separation of powers.<sup>473</sup> And yet, none of the previous arguments appear decisive. With regard to bureaucratic efficiency and trust, such programs may indeed offer public authorities an opportunity to improve competencies and accountability. With regard to judicial oversight, courts, as demonstrated in *Leghari*, are generally able to determine when oversight is not needed, or is no longer feasible. By that time, public authorities may have already learned how to cooperate with one another, which may be one of the most relevant hurdles to complex adaptation measures. On the separation of powers principle, two concluding remarks are in order. As foreshadowed by Montesquieu and the founding fathers of the United States, a democratic judiciary is in principle the weakest of all three branches of government,<sup>474</sup> lacking “influence over either the sword or the purse.”<sup>475</sup> For this lack of budgetary and coercive power—and because, by profession, they refrain from being an interested party—courts are likely the “least dangerous” to the political rights of a constitution.<sup>476</sup> Accordingly, the previous case study offers a glimpse into why and how courts shall be in charge of *effective* judicial review.

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<sup>472</sup> See *supra* Part II.A.

<sup>473</sup> Lucas Bergkamp & Jaap C. Hanekamp, *Climate Change Litigation Against States: The Perils of Court-Made Climate Policies*, 24 EUR. ENERGY & ENVTL. L. REV. 102, 133–14 (2015).

<sup>474</sup> CHARLES DE SECONDAT & BARON DE MONTESQUIEU, *THE SPIRIT OF LAWS* 177 (Thomas Nugent trans., Batoche Books 2001) (1748); see also THE FEDERALIST NO. 78 (Alexander Hamilton), [https://avalon.law.yale.edu/18th\\_century/fed78.asp](https://avalon.law.yale.edu/18th_century/fed78.asp).

<sup>475</sup> THE FEDERALIST NO. 78, *supra* note 473 (Alexander Hamilton). Hamilton continues by saying that the judiciary has “no direction either of the strength or of the wealth of the society; and can take no active resolution whatever. It may truly be said to have neither FORCE NOR WILL but merely judgment; and must ultimately depend upon the aid of the executive arm even for the efficacy of its judgments.” *Id.*

<sup>476</sup> *Id.*