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Climate Refugees:

Can States Survive the Changing Climate?

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Climate Refugees: Can States Survive the Changing Climate?

In 2019, over 11,000 scientists declared the world to be in a "climate emergency."<sup>1</sup> If the climate continues to change at its disastrous rate, then millions of humans will be affected by environmental degradation for decades to come. In the last few decades, a climate refugee<sup>2</sup> crisis developed as a result of environmental factors such as "drought, desertification, deforestation, soil erosion, water shortages, rising sea levels, and natural disasters."<sup>3</sup> Climate refugees are people who have been displaced from their homes due to environmental changes and are forced to seek refuge elsewhere, sometimes having to cross into other countries.<sup>4</sup> Currently, there are 25 million climate refugees in the world, compared to the 22 million refugees of "traditional kind"— or those fleeing homes for political reasons.<sup>5</sup> Even with three million more climate refugees than "traditional" refugees, international law does not recognize or protect these climate refugees.<sup>6</sup>

Climate refugees are defined in three different ways: 1) environmental emergency migrants, 2) environmental forced migrants, and 3) environmental motivated migrants.<sup>7</sup> First, environmental emergency migrants escape temporarily due to a sudden natural disaster such as a flood, hurricane, or earthquake.<sup>8</sup> Next, environmental forced migrants flee because of long-term environmental threats such as coastal deterioration or deforestation.<sup>9</sup> Finally, environmental motivated migrants choose to leave their homes out of fear of future environmental issues; for

<sup>&</sup>lt;sup>1</sup> Jackson Ryan, "Climate Emergency:' Over 11,000 Scientists Sound Thunderous Warning," CNET, (2019).

<sup>&</sup>lt;sup>2</sup> The term "climate refugee" is the most common way to refer to this phenomenon. Although many people object to this term for technical purposes, I will use it throughout my paper since it is the most frequently used among scholars.

<sup>&</sup>lt;sup>3</sup> Betsy Hartmann, "Rethinking Climate Refugees and Climate Conflict: Rhetoric, Reality, and the Politics of Policy Discourse," *Journal of International Development* 22, no. 2 (2010): 235.

<sup>&</sup>lt;sup>4</sup> Jane Steffens, "Climate Change Refugees in the Time of Sinking Islands," *Vanderbilt Journal of Transnational Law* 52, no. 3 (2019): 730.

<sup>&</sup>lt;sup>5</sup> Ibid.

<sup>&</sup>lt;sup>6</sup> Ibid., 238.

<sup>&</sup>lt;sup>7</sup> Janos J. Bogardi, Olivia Dun, Fabrice Renaud, and Koko Warner, "Environmental Degradation and Migration," *Berlin-Institut*, 2007: 2.

<sup>&</sup>lt;sup>8</sup> Ibid.

<sup>&</sup>lt;sup>9</sup> Ibid., 7.

example, someone who lives in Alexandria, Egypt may choose to leave now out of concern for the dangers associated with rising sea levels in the near future.<sup>10</sup> The distinction between the types of climate refugees will be essential to the rest of this discussion.

Climate change is an existential crisis that threatens human existence. The United Nations Framework Convention on Climate Change (UNFCCC) officially defined climate change as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is an addition to natural climate variability observed over comparable time periods."<sup>11</sup> According to the New York Times, scientists estimate that "rising seas could affect three times more people by 2050 than previously thought."<sup>12</sup> From satellite readings and estimations of sea-level rise, it is now predicted that many coastal cities will be underwater in thirty years, displacing over 150 million people.<sup>13</sup> Significant areas of major global cities such as Ho Chi Minh City, Bangkok, Shanghai, Mumbai, Alexandria, and Basra will be underwater in the next few decades (see Appendix A).<sup>14</sup> Scientists acknowledge that there is an element of uncertainty in these projections. The pictorial representations shown in Appendix A show the most recent projections on how countries like Vietnam, Thailand, China, India, Egypt, and Iraq will be impacted by rising sea levels by 2050.<sup>15</sup> This research begs the question: to what extent can states survive the changing climate? As the numbers of climate refugees increase, some people will be forced to relocate to foreign territory. Therefore, by analyzing how climate change might challenge some preconceived notions of what

<sup>&</sup>lt;sup>10</sup> *Ibid.*, 1.

<sup>&</sup>lt;sup>11</sup> Ilan Kelman, "Islandness Within Climate Change Narratives of Small Island Developing States (SIDS)," *Island Studies Journal* 13, no. 1 (2018): 151.

<sup>&</sup>lt;sup>12</sup> Christopher Flavelle and Denise Lu, "Rising Seas Will Erase More Cities by 2015, New Research Shows," *New York Times* (October 29, 2019).

<sup>&</sup>lt;sup>13</sup> Ibid.

<sup>&</sup>lt;sup>14</sup> Ibid.

<sup>&</sup>lt;sup>15</sup> *Ibid*.

constitutes a state, I will be able to assert whether or not a state can maintain statehood in the midst of a rapidly changing environment. To understand what makes someone a citizen of a state, I will focus on the regions at greatest risk of climate-related disappearance and provide further insight for this unique and complex phenomenon.

Understanding human rights is foundational to answer this research question. Centuries ago, people were asking the same questions that are being asked today: "Are we obligated to simply express words of sympathy or sorrow over the fate of victims of human rights abuse, or do we have a responsibility to take concrete action to actually protect those who suffer?"<sup>16</sup> Humans must determine how wide is their "circle of responsibility" and if it extends to the people around them.<sup>17</sup> The evolution of human rights began with the acknowledgment of human duties, not from a specific assertion for human rights.<sup>18</sup> At some point, we all must answer the question: what is my duty as a human with regard to the people around me? What are the mutual responsibilities in society? As the number of climate refugees increases worldwide, the answers to these moral questions will dictate new environmental policies and possible limitations on the concept of state sovereignty.

#### I. The Global Response Toward Climate Refugees: Three Perspectives

The global impact of climate refugees is both alarming and dynamic. As a result of displacement due to climate change, more and more people are forced to cross borders, creating repercussions on international peace and security.<sup>19</sup> Determining the most appropriate global

<sup>&</sup>lt;sup>16</sup> Paul Gordon Lauren, *The Evolution of International Human Rights*, 3rd ed. (Philadelphia, PA: University of Pennsylvania Press, 2011): 5.

<sup>&</sup>lt;sup>17</sup> *Ibid*.

<sup>&</sup>lt;sup>18</sup> *Ibid.*, 6.

<sup>&</sup>lt;sup>19</sup> Frank Biermann and Ingrid Boas, "Protecting Climate Refugees: The Case for a Global Protocol," *Environment* 6, no. 6 (2008): 12.

response for climate change, specifically for climate refugees, is an extremely convoluted process.<sup>20</sup> When refugees are displaced, where are they supposed to relocate? Do states that are largely accountable for accelerating climate change have a particular responsibility to welcome climate refugees into their country? At the core of determining the global response toward climate refugees is the relationship between climate change and human rights. The international community answers the climate refugee crisis in three different ways—through intergovernmental responsibility, legal reform, and private governance.<sup>21</sup>

Some argue that the solution to international security issues raised by climate refugees lies in intergovernmental responsibility. The United Nations (UN) was established in 1945 as an intergovernmental organization in order to address the globe's most pressing issues. The UN's 2030 Global Agenda focuses on 17 Sustainable Development Goals (SDGs) with "Climate Action" as a cornerstone to development. At the 2019 Climate Action Summit, UN Secretary-General Antonio Guterres declared, "The climate emergency is a race we are losing, but it is a race we can win. The climate crisis is caused by us—and the solutions must come from us."<sup>22</sup> In addition, the United Nations High Commissioner for Refugees (UNHCR)—the UN Refugee Agency—assists nearly 60 million refugees in 126 countries.<sup>23</sup> In 2008, the UNHCR dealt with only 10 million refugees, which means its reach grew six times larger in the past decade.<sup>24</sup> While the UNHCR recognizes displaced persons as a result of climate change, its mandate focuses on political refugees and does not currently extend to climate refugees.<sup>25</sup> Other international

<sup>&</sup>lt;sup>20</sup> María José Fernández, "Refugees, Climate Change and International Law," *Forced Migration Review* 1, no. 49 (2015): 42.

<sup>&</sup>lt;sup>21</sup> *Ibid.*; Steffens, 761.

<sup>&</sup>lt;sup>22</sup> Antonio Guterres, "Remarks at 2019 Climate Action Summit," UN General Assembly (September 23, 2019).

<sup>&</sup>lt;sup>23</sup> "Refugees," United Nations High Commissioner for Refugees (2018).

<sup>&</sup>lt;sup>24</sup> Biermann and Boas, 11.

<sup>&</sup>lt;sup>25</sup> Steffens, 743.

agencies such as the UN Development Programme (UNDP), the UN Environment Programme (UNEP), the World Bank, and the UN Security Council intercede to promote international cooperation on global issues.<sup>26</sup> By creating multilateral solutions through an intergovernmental organization such as the UN, the international community can collaborate to better understand the various climate crises occurring across the globe.

Others argue that legal reform is the most effective solution to those affected by climate change displacement. Historically, the climate refugee crisis has been difficult for the international community to address because "climate refugee" is not a legal term and is not included in the description of a refugee in the 1951 Refugee Convention—a clear example of the divide between human rights and climate change.<sup>27</sup> By focusing on international legal reform, climate refugees would be given protection and assistance under principles of "proximity, proportionality, and non-discrimination."<sup>28</sup> In order to have the greatest impact, legal reforms must remain broad in a climate change and human rights context.<sup>29</sup> Initially, legal reforms should focus on local importance, then expand to regional, and ultimately to global international law.<sup>30</sup> By addressing climate refugees with legal reforms, the international community can experience sustainable change.

In contrast to these perspectives, others counter that private governance can fill the gap between law and needs of the international community.<sup>31</sup> In response to the continued failure of public institutions to instigate lasting solutions for climate change, a small group of "progressive environmental scholars" have introduced private climate-governance initiatives to address

- <sup>28</sup> Ibid.
- <sup>29</sup> Ibid.
- <sup>30</sup> *Ibid.*, 43.

<sup>&</sup>lt;sup>26</sup> Biermann and Boas, 11-12.

<sup>&</sup>lt;sup>27</sup> Fernández, 42.

<sup>&</sup>lt;sup>31</sup> Steffens, 761.

climate refugees.<sup>32</sup> The foundational purpose of private governance is to act as a placeholder until strategic legal reform (as discussed in the second school of thought) is adopted.<sup>33</sup> For example, Tesla and IKEA have used creative design initiatives that encourage collaboration with governments who are interested in environmentally friendly developments.<sup>34</sup> Tesla works with Puerto Rico and Australia in a public-private partnership to use the technology available to them in order to temper the detrimental effects of climate change.<sup>35</sup> Tesla has chosen to work with governments because the public sector can fill gaps where the private sector is lacking. IKEA is also using its resources to help displaced persons by ensuring that more shelters are properly equipped with power and electricity.<sup>36</sup> A major advantage of a private governance approach is the relative autonomy the private sector has to create sustainable change, a freedom which intergovernmental organizations or legal reforms sometimes lack.

The strengths and weaknesses of the three approaches in response to climate refugees is clear. First, intergovernmental organizations often do not have the necessary framework to guarantee long-lasting solutions for the entire world in a timely manner. The UN can most adequately effect change through its smaller specialized agencies, such as the UNHCR, if its mandate can expand to officially recognize climate refugees. Although international law has the potential to create binding solutions among states, many aspects of this model are problematic including the difficulty of enforcing international law. "Political will," or various political motivations and policies, stands in the way of constituting any international agreements.<sup>37</sup>

- <sup>33</sup> Ibid.
- <sup>34</sup> *Ibid.*, 763-65.
- <sup>35</sup> Ibid., 764.
- <sup>36</sup> Ibid., 765.

<sup>&</sup>lt;sup>32</sup> *Ibid*.

<sup>&</sup>lt;sup>37</sup> Fernández., 42.

not a recognized legal term and there is no legal precedent on the issue.<sup>38</sup> As a result, human rights and climate change developed into two distinct legal systems. This forces policy makers to invent a way to merge the two.<sup>39</sup> Finally, private governance can create change through small actions, but private governance does not have nearly the breadth of political or ethical influence that governmental organizations have. According to Jane Steffens of Vanderbilt Law, "Private climate-governance initiatives can bypass government gridlock in a way that international law cannot because corporate contracts are not required to respect international boundaries."<sup>40</sup> As a result, private governance can be just the vehicle needed to effect substantial global change.<sup>41</sup> In 2002, former secretary-general of the UN Kofi Annan applauded the private sector for being "critical in the protection of the environment."<sup>42</sup> Even with the power of intergovernmental organizations like the UN, there are gaps in progress that the private sector has filled.

While there are three perspectives on the best global response toward climate refugees, the most effective technique is one that utilizes intergovernmental organizations like the UN and other coalitions that partner with the UN to advocate for smaller states. With agencies like the UNHCR, intergovernmental organizations have the opportunity to combine the advantages of the other two schools of thought—legal reform and private governance. In the 1950s, at the time of the Geneva Convention and creation of the UNHCR's mandate, the global community could not have imagined the vast emergence of climate refugees, therefore it is time that we respond. <sup>43</sup> While intergovernmental organizations provide the best solutions to climate refugees by bridging the gap between the public and private sector with far-reaching international influence,

- <sup>39</sup> Ibid.
- <sup>40</sup> Ibid., 761.
- <sup>41</sup> *Ibid*.
- <sup>42</sup> Ibid., 762. <sup>43</sup> Ibid.

<sup>&</sup>lt;sup>38</sup> Steffens, 755.

ultimately each of the three approaches must work together in order to be most effective. Intergovernmental organizations merge both states and the private sector in order to form international law.

### II. International Law

International law defines the state as an entity with a "permanent population, territory, government, and capacity to enter into relations with other states."<sup>44</sup> This is an important starting point to understand how people are protected under international law. Many wish to develop an international framework regarding climate refugees since climate refugees pose several threats to international security.<sup>45</sup> Edith Brown Weiss, a law professor at Georgetown University Law Center, says that "in order to implement a strategy for managing global climate change, it will be necessary to develop enforceable norms of behavior at the international, national, and local level."<sup>46</sup> Existing legal structures such as the Universal Declaration on Human Rights (UDHR), the 1951 Refugee Convention, the UN Framework Convention on Climate Change (UNFCCC) including the Kyoto Protocol, the UNHCR's *Guiding Principles on Internal Displacement*, and the 2018 Global Compact on Refugees (GCR) guide the international community to create more binding solutions.<sup>47</sup>

The concept of refugee was officially defined in the 1951 Refugee Convention as "someone who has been forced to flee his or her country because of persecution, war, or

<sup>&</sup>lt;sup>44</sup> Valentina Baiamonte and Chiara Redaelli, "Small Islands Developing States and Climate Change: An Overview of Legal and Diplomatic Strategies," *Journal of Public and International Affairs* (2017): 8.

<sup>&</sup>lt;sup>45</sup> Hartmann, 233.

<sup>&</sup>lt;sup>46</sup> Edith Brown Weiss, "Climate Change, Intergenerational Equity, and International Law," *Vermont Journal of Environmental Law* 9, (2008): 624.

<sup>&</sup>lt;sup>47</sup> Lauren, 219.; Angela Williams, "Turning the Tide: Recognizing Climate Change Refugees in International Law," *Law and Policy* 30, no. 4 (October 2008): 502.; *Ibid.*, 503.

violence. A refugee has a well-founded fear of persecution for reasons of race, religion, nationality, political opinion or membership in a particular social group."<sup>48</sup> The Universal Declaration of Human Rights (UDHR), created by the UN in 1948, delineated the international understanding of human rights.<sup>49</sup> From the UDHR framework, the world was able to understand the role of human rights in the world such as individual rights and collective responsibilities, sparking a significant transformation in international, regional, and national actions in support of human rights.<sup>50</sup> Over seventy years after its creation, the UDHR is still regarded as the "greatest achievement of the UN" and "one of the greatest steps forward in the process of global civilization."<sup>51</sup>

In 1992, the Kyoto Protocol resulted in better facilitation of "regional law and policy development in response to climate change displacement," which directly affects climate refugee protection today.<sup>52</sup> While the Kyoto Protocol is one among few "international attempts to curb climate change," specialized frameworks are needed to solidify change and protection for refugees. For example, the Alliance of Small Island States (AOSIS)—an intergovernmental organization—advocates to the UN on behalf of Small Island Developing States (SIDS).<sup>53</sup> The UNHCR's *Guiding Principles on Internal Displacement* exists to encourage national policies to protect internally displaced persons.<sup>54</sup> In 2018, the UN General Assembly ratified the Global Compact on Refugees (GCR) to bolster the way the international system reacts to "large-scale

<sup>53</sup> Ibid.

<sup>&</sup>lt;sup>48</sup> "What is a Refugee?," United Nations High Commissioner for Refugees (2019).

<sup>&</sup>lt;sup>49</sup> Lauren, 219.

<sup>&</sup>lt;sup>50</sup> *Ibid.*, 222, 225.

<sup>&</sup>lt;sup>51</sup> Ibid.

<sup>&</sup>lt;sup>52</sup> Williams, 503.

<sup>&</sup>lt;sup>54</sup> Ibid.

and protracted displacement worldwide."<sup>55</sup> Because of the GCR, the UNHCR acknowledges that "climate, environmental degradation, and natural disasters increasingly interact with the drivers of refugee movements."<sup>56</sup> Without these frameworks, makers of international law would lack understanding of various states' interests regarding climate refugees.

While intergovernmental organizations like the UN have initiated global conversations regarding the effects of climate change, significant gaps in international law between human rights and environmental rights prevent lawmakers from legally protecting climate refugees.<sup>57</sup> This is due to a myriad reason such as considering how a binding law will affect those who are displaced. A common fear among lawmakers is that "applying a human rights framework to climate refugees could eventually lead to a harm that outweighs the purported benefits."<sup>58</sup> However, other scholars disagree, asserting that since "climate change will result in the infringement of human rights, it makes normative sense to consider climate change via a human rights framework."<sup>59</sup> Additionally, climate change must take into consideration scientific knowledge, which frequently changes; therefore, drafted legal solutions must be able to adapt to scientific discoveries.<sup>60</sup> When applying law to the international sphere, lawmakers must consider the issues of crossing borders, shared responsibility, and defining the problem.

Climate refugees who seek refuge by crossing borders into other states encounter unique difficulties. If climate refugees can no longer stay in the country they were displaced from, which country is responsible for relocating them? Steffens contends that "even if responsibility

<sup>59</sup> Ibid., 755.

<sup>&</sup>lt;sup>55</sup> Madeline Garlick and Volker Türk, "Addressing Displacement in the Context of Disasters and the Adverse Effects of Climate Change: Elements and Opportunities in the Global Compact on Refugees," *International Journal of Refugee Law* 31, no. 2 (2019): 389.

<sup>&</sup>lt;sup>56</sup> Ibid.

<sup>&</sup>lt;sup>57</sup> Steffens, 755.

<sup>&</sup>lt;sup>58</sup> *Ibid.*, 756.

<sup>&</sup>lt;sup>60</sup> Weiss, 625.

and harm could be established, existing human rights law is concerned primarily with how a government treats its own citizens and others living within its territory and under its jurisdiction."<sup>61</sup> While some climate refugees must cross borders during relocation, the majority seek protection in their "country of origin" and become known as internally displaced persons or IDPs.<sup>62</sup> The 1998 *Guiding Principles on Internal Displacement* acts as a "soft law" to address the protection of IDPs.<sup>63</sup> Paragraph 2 of *Guiding Principles on Internal Displacement* defines IDPs by including the concept of environmentally displaced persons:

[IDPs are defined as] persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or *natural or human-made disasters*, and who have not crossed an internationally recognized State border.<sup>64</sup>

Angela Williams, law professor at the University of Sussex, reminds the international community that "as the Refugee Convention is limited to situations where forced migration results in persons crossing state borders, the plight of those displaced internally falls outside the remit of the Refugee Convention, and, thus, such individuals are not protected by the framework of international refugee law."<sup>65</sup> Because the majority of climate refugees are IDPs, the responsibility of protection often falls on the state and its willingness to guarantee rights to the IDPs.<sup>66</sup>

The GCR discusses the importance of responsibility sharing regarding IDPs in the international community. Paragraph 12 of the GCR affirms that "states may seek support from

<sup>&</sup>lt;sup>61</sup> Steffens, 756.

<sup>&</sup>lt;sup>62</sup> Vikram Kolmannskog, "Climate Change, Environmental Displacement, and International Law," *Journal of International Development* 24, no. 8 (2012): 1072.

<sup>&</sup>lt;sup>63</sup> Ibid.

<sup>&</sup>lt;sup>64</sup> Williams, 511 (emphasis added).

<sup>&</sup>lt;sup>65</sup> *Ibid.*, 510.

<sup>&</sup>lt;sup>66</sup> Kolmannskog, 1074.

the international community to address complex challenges, which may include those arising in the context of disasters and the adverse effects of climate change."<sup>67</sup> In order to best support climate refugees, the GCR encourages states to support communities who are hosting refugee populations.<sup>68</sup> The GCR enhances answers to displacement, including in developing countries, through "resettlement and complementary pathways comprising, *inter alia*, labour migration, student visa schemes, family reunification, and humanitarian visas. It also seeks to foster improved conditions for sustainable return, as well as local solutions including, where appropriate, integration, in host countries."<sup>69</sup> Furthermore, the GCR mobilizes a "wide range of stakeholders, including governments, international organizations, civil society, and the private sector, to transform the way these respond to displacement and international protection challenges" and complements the legal refugee protection system by encouraging collaboration between states of origin and states of relocation for increased unity with climate refugees.<sup>70</sup>

Some of the greatest challenges lawmakers face include how to legally define climate refugees, how to protect them, and who is responsible for doing so. Steffens says that "establishing a proper name for those displaced by climate change is important because whatever name is adopted will have real implications for the obligations of the international community under the law."<sup>71</sup> However, at present, no term defining climate refugees is legally binding under international law.<sup>72</sup> Madeline Garlick and Volker Türk, both senior-level officials for the UNHCR, say that "refugees must be correctly recognized as such in accordance with

- <sup>69</sup> Ibid.
- <sup>70</sup> Ibid.

<sup>&</sup>lt;sup>67</sup> Garlick and Türk, 392.

<sup>&</sup>lt;sup>68</sup> Ibid., 390.

<sup>&</sup>lt;sup>71</sup> Steffens, 757.

<sup>&</sup>lt;sup>72</sup> Ibid.

international legal criteria, rather than receiving a complementary form of status."<sup>73</sup> In the 1970s, the concept of environmentally displaced persons first emerged after significant desertification in Africa.<sup>74</sup> Then, the phenomenon was defined as "those who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption that jeopardizes their existence and/or seriously affected the quality of life."<sup>75</sup> The UNHCR uses the term "environmentally displaced persons" and rejects the term "environmental refugee" as a "misnomer" because using the term "refugee" confuses the responsibility between the national government of the displaced person and the international community at large.<sup>76</sup> Others intentionally use the word "migrant" instead of "refugee" to avoid stark political implications and to lead to more effective protections by "de-victimizing migrants and reframing their decision to migrate as an adaptation tool."<sup>77</sup> Constantly changing the definition implies that the climate refugee epidemic is a political issue instead of an environmental one; therefore, the goal of a unanimous definition is to gain international consensus that this group needs both "recognition and protection."<sup>78</sup>

Since climate refugees are not legally recognized as "refugees," many have suggested amending the 1951 Refugee Convention definition. However, changing the definition in the Convention risks weakening the current protection for refugees and "could endanger the advances achieved so far in the early years of the 21st century."<sup>79</sup> Additionally, several governments strongly object to this because it would "open the refugee floodgates," resulting in

<sup>&</sup>lt;sup>73</sup> Garlick and Türk, 395.

<sup>&</sup>lt;sup>74</sup> Steffens, 757.

<sup>&</sup>lt;sup>75</sup> Ibid.

<sup>&</sup>lt;sup>76</sup> Ibid.

<sup>&</sup>lt;sup>77</sup> Ibid., 758.

<sup>&</sup>lt;sup>78</sup> Ibid.

<sup>&</sup>lt;sup>79</sup> Williams, 509.; Fernandez, 43.

severe security consequences.<sup>80</sup> Expanding this definition is not the best solution because "adding the adjective 'environmental' to the category 'refugee' is generally unhelpful given that environmental change cannot meaningfully be separated from political and economic changes."81 In 2002, the UNHCR made a statement warning against this saying, "Lumping both groups together under the same heading would further cloud the issues and could undermine efforts to help and protect either group to address the root causes of either type of displacement."82 Repeatedly, the UNHCR explains that the significant differences between traditional refugees and climate migrants entails a separate legal treatment of the two groups.<sup>83</sup> For example, those displaced by environmental change could still rely on their national government while traditional refugees cannot.<sup>84</sup> Another hindrance to specifically defining this term is that doing so will lead to "in" and "out" groups.<sup>85</sup> Rather than a specific definition of climate refugee, the GCR advocates a broader interpretation of "refugee" in order to overcome the existing gaps in international law regarding climate change.<sup>86</sup> Vikram Kolmannskog, a member of the Norwegian Refugee Council, asserts that policy makers "should fully exploit existing international law by applying a dynamic and context-oriented interpretation of internally displaced person law, refugee law and human rights law as well as develop new law and policy on national, regional, and international levels."<sup>87</sup> While defining "refugee" has been problematic, some believe that an expansive view of what is already in place can pave the way for significant protections.

- <sup>81</sup> Ibid.
- <sup>82</sup> *Ibid.*, 510.
- <sup>83</sup> Ibid., 509.
- <sup>84</sup> Williams, 509.
- <sup>85</sup> Steffens, 760.
- <sup>86</sup> Garlick and Türk, 394.

<sup>&</sup>lt;sup>80</sup> Williams, 509.

<sup>&</sup>lt;sup>87</sup> Kolmannskog, 1072.

International law easily becomes convoluted when sovereignty conflicts with individual interests. A UN official comments on the delicacy of international law, sovereignty, and individual rights:

The setting up of international machinery to protect individual human rights would be one of the greatest international achievements in history. It would assert that just as the real purpose of a state's government is to ensure the welfare of the individual human being, so the real concern of international law is with the welfare of individuals. It would at the same time be a more drastic limitation of sovereignty than any state has yet been prepared to accept.<sup>88</sup>

At this time, it is not necessary to change the existing international law on climate refugees, but rather the focus should be on expanding its interpretation in "dynamic and contextual" ways.<sup>89</sup> For example, the 1951 Refugee Convention is nearly seventy years old but has remained relevant except for its omission of climate refugees.<sup>90</sup> A new treaty offering a "fix all" solution would not be the best answer either.<sup>91</sup> The best solution is not necessarily in creating new legislation, but through building on the existing framework. Additionally, cooperation between the UN and other organizations such as UNHCR, IOM, and AOSIS is the essential link for successful "policy development."<sup>92</sup> By first implementing a bottom-up approach in regional strategies then expanding to global protection, climate refugees can be protected and recognized in international law.<sup>93</sup>

### III. Case Study: Small Island Developing States (SIDS)

<sup>&</sup>lt;sup>88</sup> Lauren, 217.

<sup>&</sup>lt;sup>89</sup> Kolmannskog, 1075.

<sup>&</sup>lt;sup>90</sup> Ibid.

<sup>&</sup>lt;sup>91</sup> Steffens, 759.

<sup>&</sup>lt;sup>92</sup> Garlick and Türk, 393.

<sup>&</sup>lt;sup>93</sup> Williams, 512.; Fernandez, 43.

The developing world is most impacted by climate change and sea-level rise. Small Developing Island States (SIDS) are facing the greatest risk of territory disappearance due to rising sea levels, despite the fact that SIDS only account for "0.03 percent of total worldwide CO<sub>2</sub> emissions."<sup>94</sup> Teburoro Tito, the former President of the Republic of Kiribati, a SIDS, uses a metaphor to describe the susceptibility of small island states to climate change and large hegemonies in the international system: "It is like little ants making a home on a leaf floating on a pond. And the elephants go to drink and roughhouse in the water. The problem is not the ants" behavior. It's a problem of how to convince the elephants to be more gentle."<sup>95</sup>According to Pamela Chasek, Chair of the Political Science Department at Manhattan College, "Pacific SIDS believe that while the Kyoto Protocol was a first step towards cutting back on greenhouse gas emission, the targets contained in the Kyoto Protocol were inadequate."<sup>96</sup> Valentina Baiamonte and Chiara Redaelli, Ph.D. graduates from the Graduate Institute of International and Development Studies, explain the tensions between SIDS and industrialized countries in this hypothetical scenario:

In the case of sea-level rise, for instance, a state A can be the main producer of greenhouse gases while at the same time less affected by global warming and sea-level rise. State A may also have more financial resources to tackle the problem and deploy climate change adaptation measures; thus, it does not urgently need international support. Conversely, a state B can be highly impacted by sea-level rise, but have few resources to tackle the issue. Thus, state B would be more prone to advocate for stricter international emission regulations and cooperative solutions to tackle issues posed by climate change, both internationally and bilaterally.<sup>97</sup>

<sup>&</sup>lt;sup>94</sup> Baiamonte and Redaelli, 14.

<sup>&</sup>lt;sup>95</sup> Pamela S. Chasek, "Margins of Power: Coalition Building and Coalition Maintenance of the South Pacific Island States and the Alliance of Small Island States," *Review of European Community and International Environmental Law* 14, no. 2 (2005): 131.

<sup>&</sup>lt;sup>96</sup> *Ibid.*, 128.

<sup>&</sup>lt;sup>97</sup> Baiamonte and Redaelli, 17.

Table 1 illustrates the disproportionate effects of climate change and the relationship between developing and industrialized states.<sup>98</sup> The top column differentiates between countries with high or low sea-level rise vulnerability. The horizontal column specifies which countries have high or low abatement costs. If a country has a high abatement cost, then a high financial commitment is necessary to fulfil the environmental requirements.

		Sea level vulnerability	
		Low	High
Abatement Costs	Low	(a) Bystanders	(b) Intermediaries
	High	(c) Draggers	(d) Promoters

**Table 1**: Adaptation from Detlef Sprinz and Tapani Vaahtoranta to show the difference in concern between developing and industrialized states regarding climate change.<sup>99</sup>

States in cell (d), promoters, would presumably advocate for specific and strict environmental regulations for the world since their population would be at a high risk of being displaced. This category would most likely comprise SIDS who have both high vulnerability to sea-level rise and high abatement costs. These abatement costs would include guaranteeing safe drinking water and preventing destruction of fertile soil. The population of promoters is at the highest risk of becoming climate refugees.<sup>100</sup>

<sup>&</sup>lt;sup>98</sup> Ibid.

<sup>&</sup>lt;sup>99</sup> Ibid.

Countries in cell (b) "act as intermediates as they have lower abatement costs and higher levels of vulnerability to sea-level rise."<sup>101</sup> These countries share their high vulnerability to climate change with SIDS; therefore, they understand the seriousness of these issues.<sup>102</sup>

States in cell (a), bystanders, have both "little concern about sea-level rise, and low abatement costs."<sup>103</sup> For example, land-locked countries, such as Switzerland, are considered bystanders and their populations are at very low risk of being displaced by sea-level rise. Because of this, they do not necessarily have a national interest in increasing climate regulations. However, the bystanders' low abatement costs could encourage them to advocate for the SIDS that are at high risk of destruction.<sup>104</sup>

Finally, the countries in cell (c), draggers, "display low levels of vulnerability, yet high costs, dragging the scope of environmental commitment behind. 'Draggers' may be skeptical about joining costly international commitments focusing on sea-level rise." Often industrialized countries are considered draggers and their population is at very low risk of climate-related displacement<sup>105</sup>

There are fifty-seven SIDS spanning the Pacific Ocean, Indian Ocean, Caribbean, Mediterranean, and South China Sea.<sup>106</sup> Environmental scientists have repeatedly found that "most SIDS are situated only one meter above sea level and face gradual sea-level rise along with extreme weather events like flooding."<sup>107</sup> With likely submergence in the next thirty years, SIDS present unprecedented difficulties for international refugee law.<sup>108</sup> Ilan Kelman, researcher

- <sup>103</sup> *Ibid.*, 17.
- <sup>104</sup> *Ibid.*, 17, 18.
- <sup>105</sup> *Ibid*.
- <sup>106</sup> Steffens, 738.
- <sup>107</sup> Ibid.
- <sup>108</sup> Ibid.

<sup>&</sup>lt;sup>101</sup> *Ibid*.

<sup>&</sup>lt;sup>102</sup> *Ibid*.

at University College London, says the three main ways that SIDS could become uninhabitable

are through sea-level rise, ocean acidification, and contaminated food systems.<sup>109</sup>

SIDS location	Results	
33 reef islands of the Solomon Islands	Island responses range from entire disappearance to minor accretion.	
Torres Islands, Vanuatu	Tectonic subsidence is dominating sea-level rise as the reason for ocean encroachment.	
Reef islands of Tarawa Atoll, Kiribati	Sea-level rise is measurable, but atoll changes are mainly from local societal activities. Where societal activities are less noticeable, some shorelines are eroding and some are accreting.	
Eight islands of the Marshall Islands	Sea-level rise is measurable, but all the islands show net accretion.	
29 islands of Funafuti Atoll, Tuvalu	Sea-level rise is measurable, with island responses ranging from severe erosion to significant land gain.	
Takú Atoll, Papua New Guinea	Sea-level rise is measurable, but is not dominating natural shoreline dynamics.	
Over 200 Pacific islands	Despite measurable sea-level rise, little evidence exists of island sizes being reduced, with both local societal activities and wider environmental cycles dominating sea-level rise.	
17 atolls across Kiribati	Increased rates of change for both erosion and accretion.	
27 atoll islands across the Federated States of Micronesia, Kiribati, and Tuvalu	Sea-level rise is measurable, but the islands showed a mixture of erosion, accretion, and stability, with only a few islands losing area overall.	
47 atolls of Manihi and Manuae, French Polynesia	Despite measurable sea-level rise, most island areas are expanding or remaining stable, although major localized changes are seen. Two atolls showed local societal activities influencing the changes.	

Table 2 shows how various SIDS are likely to be impacted by climate change.

<sup>&</sup>lt;sup>109</sup> Ilan Kelman, "Islandness Within Climate Change Narratives of Small Island Developing States (SIDS)," *Island Studies Journal* 13, no. 1 (2018): 152.

Table 2: Current research of how climate change has affected these various SIDS.<sup>110</sup>

Many inhabitants of SIDS note how the possibility of migration has become part of their culture, observing that "only a handful of SIDS have current communities which are older than a few millennia."<sup>111</sup> One example of the effects of climate change on migration is the Maldives— "an Indian Ocean archipelago with 1,190 islands grouped into 26 low-lying coral atolls, where its highest point is only 2.4 meters above sea level."<sup>112</sup> While Maldivians are aware of the imminent threat of their island sinking, many are more concerned with current non-climate related difficulties such as freshwater shortage and housing management.<sup>113</sup> Like the Maldives, many SIDS are experiencing other economic, environmental, and societal hardships so that likely the climate refugee threat is not their most immediate concern. Robert Stojanov, a renowned environmental professor at Mendel University in Brno, claims that the climate refugee scare is misdirecting the attention of policymakers:

Many assume that climate change will dominate migration decisions and lead to inevitable, forced movement, but neither the people affected nor the science support this belief. A policy approach that accounts for people's migration-related interests, preferences, resources, and decision-making criteria instead would ensure that people have a say in and control over their own migration-related fates. With governmental and non-governmental support for migration-related decisions, including working through options with the people being affected, rather than prescribing top-down decisions, migrants can mitigate the detrimental consequences of migration, such as mental health impacts from loss of home and identity.<sup>114</sup>

According to current projections, sea-level rise will have significant effects on Maldivian

migration choices, but so will many other factors. Maldivians are also preparing for migration

<sup>110</sup> Ibid.

<sup>&</sup>lt;sup>110</sup> *Ibid.*, 155.

<sup>&</sup>lt;sup>111</sup> *Ibid.*, 156.

 <sup>&</sup>lt;sup>112</sup> Barbora Duží, Ilan Kelman, Daniel Němec, David Procházka, and Robert Stojanov, "Climate Change and Migration in the Maldives," *Georgetown Journal of International Affairs* (August 2017).
 <sup>113</sup> *Ibid*.

<sup>&</sup>lt;sup>114</sup> Ibid.

due to "livelihood-related, social and environmental reasons."<sup>115</sup> Furthermore, "Maldivians' primary migration-related interests remain jobs, health, and education," not environmental threats.<sup>116</sup> Many young people in the Maldives migrate to other countries for better job opportunities, economic structures, and financial resources.<sup>117</sup> Even when climate change forces more Maldivians to seek refuge elsewhere, these other factors are still expected to influence migration choices.

To address this, AOSIS exists to advocate to the UN on behalf of the SIDS since many of them are not UN members. In the thirty years of its existence, AOSIS has been able to maximize the influence of SIDS in the UN by generating awareness for the unique issues that these island states face.<sup>118</sup> Mary Jo Larson, Director at the Center for Development and Population Activities, says that "through multilateral environmental negotiations, which are more inclusive and transparent than bilateral negotiations, low-power parties can become influential participants in policy debates."<sup>119</sup> SIDS are able to have a voice in international negotiations because of the influence of AOSIS. While major cities in countries such as Vietnam, Thailand, China, India, Egypt, and Iraq are also at high risk of submersion, SIDS' unique case of their immediate vulnerability makes them compelling subjects for scientists and policymakers to study.<sup>120</sup>

## IV. Conclusion: Rethinking Statehood

International law does not adequately protect the human rights of climate refugees. Because millions of people will be displaced by climate change, it is essential that climate

- <sup>118</sup> Chasek, 125.
- <sup>119</sup> *Ibid.*, 126.

<sup>&</sup>lt;sup>115</sup> *Ibid*.

<sup>&</sup>lt;sup>116</sup> *Ibid*.

<sup>&</sup>lt;sup>117</sup> Ibid.

<sup>&</sup>lt;sup>120</sup> Flavelle and Lu.

refugees be protected in international law. State sovereignty is at the heart of this dilemma and must be reimagined as the world adapts to the rapidly changing climate. Today, we face a new reality: state territory will disappear and people will be forced to relocate. In response to this, the international system should rethink both sovereignty and the state itself as promoters of human flourishing.

States are wary of adopting new frameworks on climate refugees or welcoming them into their borders because of state sovereignty.<sup>121</sup> When individual rights are a global responsibility, states' desire to maintain their sovereignty often hinders successful agreements. Williams asserts that since environmental legislation involves economic, social, and political policies, universal agreements would "cut to the very heart of state sovereignty."<sup>122</sup> The issue now becomes, is the preservation of state sovereignty important enough to forego human rights assistance? Selma Oliver, professor at Lund University in Sweden, argues that it has "become apparent that the principle of state sovereignty, although recently increasingly impinged by concern for human rights, still hinders the continued protection of the human rights of the individuals in question."<sup>123</sup>

While creating environmental policy has the potential for lasting improvements and protections, factors such as sovereignty, limits of the law, and its effect on those who are forced to migrate indicate that law and policy may not be the most effective solution to the changing climate. For example, SIDS like Tuvalu worry that industrialized countries believe relocation to be the catch-all solution to the issue of climate refugees instead of restricting the greenhouse gas

<sup>&</sup>lt;sup>121</sup> Williams, 511.

<sup>&</sup>lt;sup>122</sup> *Ibid.*, 517.

<sup>&</sup>lt;sup>123</sup> Selma Oliver, "A New Challenge to International Law: The Disappearance of the Entire Territory of a State," *International Journal on Minority and Group Rights* 16, no. 2 (2009): 215.

emissions responsible for much of the sea-level rise.<sup>124</sup> Additionally, many scholars believe that expanding the 1951 Refugee Convention to include climate refugees will be counterproductive and result in weaker protection for both political and climate refugees. Furthermore, islanders who are displaced by climate change "have expressed discomfort in being considered 'refugees.'"<sup>125</sup> Barbora Duží, a Research Fellow at the Czech Academy of Sciences in Brno, asserts,

Policymakers should not assume that islanders must migrate to adapt to climate change. Even though major climate change impacts, especially sea-level rise, may or may not change future perceptions of migration, climate change must always be placed within the wider context of many other social and environmental impacts and opportunities for islanders. Otherwise, a danger exists of implementing a policy solution without understanding the policy problem, harming the people affected.<sup>126</sup>

The reluctance of states to give up their sovereignty is a primary barrier to implementing international agreements. State sovereignty itself is the hindrance to meaningful changes in the international sphere, not gaps in international law. Therefore, I assert that the state can persist without its territory even when a substantial portion of its population must be resettled due to climate change.

Nonetheless, since state sovereignty is not going away, SIDS are already preparing for the loss of their territory. Recently, Kiribati "bought 5,460 acres of land from Fiji, and the President of the Republic of Fiji, Ratu Epeli Nailatikau, affirmed 'that the people of Kiribati will have a home if their country is submerged by the rising sea level as a result of climate change."<sup>127</sup> This poses yet another exceptional question about statehood and sovereignty. When Kiribati relocates to Fiji, will its citizens maintain Kiribatian nationality or will they be

<sup>&</sup>lt;sup>124</sup> Kolmannskog, 1075.

<sup>&</sup>lt;sup>125</sup> Baiamonte and Redaelli, 11.

<sup>&</sup>lt;sup>126</sup> Duží, *et al*.

<sup>&</sup>lt;sup>127</sup> Baiamonte and Redaelli, 13.

considered Fijian? Baiamonte and Redaelli say that the relocated persons will steadily obtain "double-nationality" and will be diplomatically protected by the host state.<sup>128</sup> Furthermore, "Maldives is negotiating with India the acquisition of land in order to relocate the population therein, while India is pushing to have access to Maldives' exclusive economic zone (EEZ) in exchange."<sup>129</sup> In this case, climate refugees have a direct effect on international trade as India and Maldives negotiate a deal to satisfy each state's interests. Are states interested in assisting with relocation of environmentally displaced persons only as long as it benefits them? Kolmannskog comments on this by saying, "A 'hegemonic' understanding of state sovereignty allows for state abuses and lack of protection of IDPs in general. Alternative understandings of sovereignty as the responsibility to protect and ensure rights for all citizens are important in IDP advocacy and can be seen as part of subaltern cosmopolitanism."<sup>130</sup> As climate refugees increase, it is likely that surrounding states will cling onto their state sovereignty even tighter. With this expectation, the Maldives and Kiribati are acting proactively for the protection of their citizens. For maximum protection of climate refugees, IDPs, and SIDS territory, sovereignty cannot be overlooked but must be incorporated into all policy decisions regarding environmental degradation and its effect on migration.

When islands are submerged or an entire state is lost due to environmental degradation, what happens to its citizens? Do they become stateless? According to Article 1 of the 1954 Convention Relating to the Status of Stateless Persons, a stateless person is defined as "a person who is not considered as a national by any state under the operation of its law."<sup>131</sup> This definition presupposes that a person becomes stateless when a state denies that person's nationality;

<sup>&</sup>lt;sup>128</sup> Ibid.

<sup>&</sup>lt;sup>129</sup> Ibid.

<sup>&</sup>lt;sup>130</sup> Kolmannskog, 1073.

<sup>&</sup>lt;sup>131</sup> *Ibid.*, 1074.

therefore, citizens from submerged states do not technically become stateless.<sup>132</sup> However, the increase of stateless persons is a true concern as sea levels are projected to rise rapidly in the next thirty years. Oliver says "the risk is that these individuals fall from being nationals of stable sovereign states to becoming stateless aliens in foreign states."<sup>133</sup> How do islands, or other countries, continue as sovereign states when their territory is gone due to climate change? Again, "international law favors stability and the continued recognition of states regardless of crises."<sup>134</sup> Without territory, SIDS could still participate and advocate in UN discussions, or be advocated for via AOSIS.<sup>135</sup> Even with these rights still guaranteed to "stateless persons," the UNHCR supports the 1961 Convention on the Reduction of Statelessness to mitigate statelessness and care for stateless persons.<sup>136</sup>

So, what does it mean to be a state without the defined territory of a country? Take Singapore for example—the world's only sovereign city-state—which is home to nearly six million people and has one of the leading economies in the world.<sup>137</sup> While Singapore has territory, its case is significant because although Singapore is not a country, it has the sovereignty of one. According to the CIA World Factbook, Singapore has the seventh highest GDP per capita in the world, overtaking many developed countries which is significant for Singapore's size and sovereignty.<sup>138</sup> Additionally, Singapore has one of the lowest global unemployment rates at 2.2% with over \$500 billion of purchasing power.<sup>139</sup> The case of

<sup>139</sup> Ibid.

<sup>&</sup>lt;sup>132</sup> Ibid.

<sup>&</sup>lt;sup>133</sup> Oliver, 243.

<sup>&</sup>lt;sup>134</sup> Kolmannskog, 1074.

<sup>&</sup>lt;sup>135</sup> Ibid.

<sup>&</sup>lt;sup>136</sup> Ibid.

<sup>&</sup>lt;sup>137</sup> Giok Ling Ooi, "The Role of the Developmental State and Interethnic Relations in Singapore," *Asian Ethnicity* 6, no. 2 (June 2005): 109.

<sup>&</sup>lt;sup>138</sup> "Singapore," *The World Factbook 2020*. Washington, DC: Central Intelligence Agency, 2020.

Singapore shows how borders and sovereignty have been re-imagined in light of the decreasing importance of territory. Therefore, it is clear that states can survive the changing climate because territory and borders are no longer an essential element of statehood. In fact, states have the potential to be more prosperous without land. Giok Ling Ooi, professor at the National Institute of Education in Singapore, says:

With the state and nation becoming less and less the territorial, political and symbolic privileged framework for economic, social and cultural life, development has implied cultural fragmentation and, with this, the questions about the meanings of cultural and national identities as well as relations between minorities and majority groups in multi-ethnic nation-states and national societies.<sup>140</sup>

The example of Singapore proves the possibility for states to have significance in the international community without having specific borders of a country. Another example of this is the "Virtual State"—an idea first introduced by Richard Rosecrance in 1996 as a "state that has downsized its territorially based production capability."<sup>141</sup> Currently, the "only international civilization worthy of the name is the governing economic culture of the world market" which can function independently of territory and citizens, proving that the state can exist even when its people are relocated.<sup>142</sup> Rosecrance discusses Singapore's success in the global economy despite unique circumstances and a relatively small amount of territory:

As the success of Singapore has demonstrated, however, huge open spaces are scarcely necessary for economic competence, nor are pre-existing competitive products. Singapore does not produce a single commodity in which it had a prior comparative advantage. It does not have oil, tin, or rice—the typical products of its neighbors. Its economic position rests on "created" comparative advantages in semiconductors, textiles, and important service industries. The countries now entering the international system are much smaller than their imperial forebears, yet they can achieve stunning economic capacity.<sup>143</sup>

<sup>&</sup>lt;sup>140</sup> Ooi, 110.

<sup>&</sup>lt;sup>141</sup> Richard Rosecrance, "The Rise of the Virtual State: Territory Becomes Passé," *Foreign Affairs* 75, no. 4 (August 1996): 46.

<sup>&</sup>lt;sup>142</sup> *Ibid.*, 45.

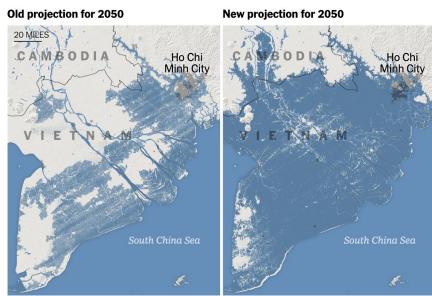
<sup>&</sup>lt;sup>143</sup> Richard Rosecrance, *The Rise Of The Virtual State Wealth And Power In The Coming Century*, (New York, NY: Basic Books, 1999): 4.

If Rosecrance's assertion of a "Virtual State" is true that territory has become less important in the global economy, the SIDS whose territory is at risk can still survive as states in the international system after their land has disappeared.

As SIDS shift their focus to relocation amidst sea-level rise and protection of IDPs, maintaining sovereignty can be achieved if economies remain strong. Since creating policy relating to climate refugees involves the surrender of social, political, and economic sovereignty, a state can persist in the preservation of its economic system and market. Human rights and state sovereignty are meant to be compatible; however, the state itself is not the answer. The ultimate goal is that human rights are universally upheld. Keeping in mind the origins of human rights, states can protect their future population by continuing to assert power in the international system during a climate crisis. By doing this, states can remain sovereign even without territory.

# Appendix A

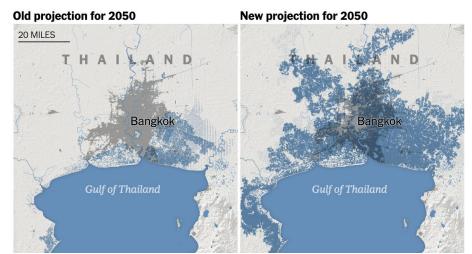
Projected Sea-Level Rise in Ho Chi Minh City, Vietnam by 2050



■ Land underwater at high tide ■ Populated area

Courtesy of New York Times<sup>144</sup>

Projected Sea-Level Rise in Bangkok, Thailand by 2050 Land underwater at high tide Populated area

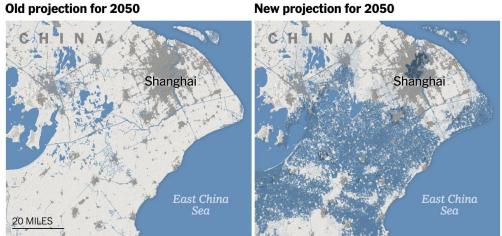


Courtesy of New York Times<sup>145</sup>

<sup>&</sup>lt;sup>144</sup> Flavelle and Lu.

<sup>&</sup>lt;sup>145</sup> Ibid.

# Projected Sea-Level Rise in Shanghai, China by 2050 Land underwater at high tide Populated area



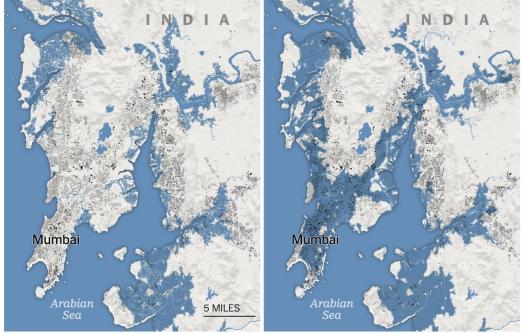
Courtesy of New York Times<sup>146</sup>

Projected Sea-Level Rise in Mumbai, India by 2050

■ Land underwater at high tide ■ Buildings



## New projection for 2050

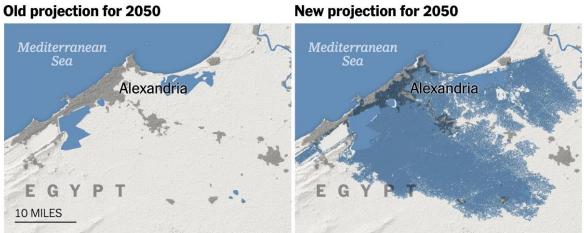


Courtesy of New York Times<sup>147</sup>

<sup>&</sup>lt;sup>146</sup> Ibid.

<sup>&</sup>lt;sup>147</sup> *Ibid*.

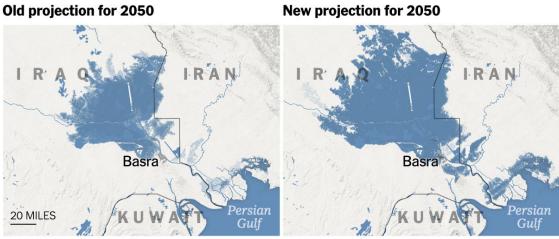
Projected Sea-Level Rise in Alexandria, Egypt by 2050 Land underwater at high tide Populated area



Courtesy of New York Times<sup>148</sup>

# Projected Sea-Level Rise in Basra, Iraq by 2050

■ Land underwater at high tide ■ Populated area



Courtesy of New York Times<sup>149</sup>

<sup>&</sup>lt;sup>149</sup> *Ibid*.