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# A STATE'S DUTY TO PREPARE, WARN, AND MITIGATE NATURAL DISASTER DAMAGES

JESSICA LUCIA FRATTAROLI\*

**Abstract:** The past two decades have brought an onslaught of increasingly severe natural disasters. Scientists warn that climate change will continue to worsen this phenomenon. Infrastructure has not, and will not, hold up to the threats these natural disaster pose. In light of this new global reality, this Note explores what duty a state has to prepare for, warn of, and mitigate natural disaster damages. Past disasters have left victims unsatisfied with their government's response to their needs. In 2005, Hurricane Katrina left victims in the U.S. Gulf region abandoned for days; in 2008, the Myanmar government refused to accept foreign aid after Cyclone Nargis swept through the countryside; and in 2009, Italian government scientists offered citizens of L'Aquila absolute assurance that they were safe to return to their homes, merely days before a 6.3 magnitude earthquake devastated the region. The extent of a state's duty, as well as access to relief, have left victims with tremendous uncertainty. Even with these hurdles and in light of the overwhelming practical and policy concerns, the needs of victims might be best satisfied outside the context of litigation.

## INTRODUCTION

"The destruction came in all forms: Wind, water, snow and fire" and the East Coast of the United States was not prepared for its magnitude.<sup>1</sup> On Sunday October 28, 2012, Hurricane Sandy surged north-eastward off the North Carolina coast.<sup>2</sup> While rain and wind ravaged the Carolinas, Virginia, and Maryland, forecasters warned that by the next morning the hurricane would wrap around a cold front, creating a

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<sup>1</sup> Wayne Drash, *Wind, Rain, Snow and Fire: The Storm That Broke Records—and Hearts*, CNN (Nov. 5, 2012), <http://www.cnn.com/2012/11/04/us/sandy-survivors-victims-narrative>; see Clark A. Miller, *Will Politicians Actually Heed the Lessons of Sandy?*, SLATE (Nov. 5, 2012), [http://www.slate.com/articles/technology/future\\_tense/2012/11/hurricane\\_sandy\\_demonstrated\\_that\\_our\\_infrastructure\\_is\\_not\\_ready\\_for\\_climate.html](http://www.slate.com/articles/technology/future_tense/2012/11/hurricane_sandy_demonstrated_that_our_infrastructure_is_not_ready_for_climate.html).

<sup>2</sup> Drash, *supra* note 1.

“superstorm” as it hit New Jersey and New York.<sup>3</sup> The forecasters were right.<sup>4</sup>

This “900-mile-wide monster” storm killed 132 Americans, damaged or destroyed tens of thousands of homes, left more than 8 million people without power, and immobilized the nation’s principal metropolitan area.<sup>5</sup> Severe wind, massive flooding, and breakout fires caused upwards of \$50 billion in damage.<sup>6</sup> In the month before Hurricane Sandy, the U.S. government came dangerously close to losing its ability to track and warn of the storm’s progress when one of its major satellites stopped working.<sup>7</sup> U.S. infrastructure was unprepared to handle the storm’s enormity, and many victims criticized the government’s ability to respond effectively to their needs.<sup>8</sup>

Forecasters dubbed Hurricane Sandy a “Frankenstorm,” but experts agree that Hurricane Sandy was no freak-storm.<sup>9</sup> Rather, it foreshadowed a future where citizens will fight to survive killer weather.<sup>10</sup> States across the United States and countries around the world have seen a recent surge in severe and deadly natural occurrences.<sup>11</sup> Scientists warn that climate change has caused this phenomenon.<sup>12</sup> Studies show that infrastructure has not and will not hold up, and countries

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

<sup>4</sup> *See id.*

<sup>5</sup> *Id.*; Stephen E. Flynn, *America Isn’t Ready for Superstorms*, CNN (Jan. 6, 2013), <http://www.cnn.com/2013/01/06/opinion/flynn-storms-preparation/index.html>; Tim Lister, *Experts Warn of Superstorm Era to Come*, CNN (Oct. 31, 2012), <http://www.cnn.com/2012/10/31/us/sandy-climate-change/index.html>.

<sup>6</sup> Drash, *supra* note 1; see Lisa L. Colangelo, et al., *Hurricane Sandy: Fire in Breezy Point Burns Down More Than 80 Homes, Residents Devastated*, N.Y. DAILY NEWS (Oct. 30, 2012), <http://www.nydailynews.com/new-york/queens/breezy-point-devastated-80-homes-burn-article-1.1194973>.

<sup>7</sup> Tricia Escobedo, *Science, Satellites and Superstorms, Preparing for the Next Big One*, CNN (Jan. 7, 2013, 8:04 AM), <http://www.cnn.com/2013/01/04/us/us-superstorm-threat>.

<sup>8</sup> See Miranda Leitsinger, *Red Cross Pushes Back on Sandy Response, Calls It ‘Near Flawless,’* NBC NEWS (Nov. 11, 2012), [http://usnews.nbcnews.com/\\_news/2012/11/11/15090950-red-cross-pushes-back-on-sandy-response-calls-it-near-flawless?lite](http://usnews.nbcnews.com/_news/2012/11/11/15090950-red-cross-pushes-back-on-sandy-response-calls-it-near-flawless?lite); Greg B. Smith, *New Yorkers Hit Hard by Hurricane Sandy Denied Aid by FEMA Bureaucracy*, N.Y. DAILY NEWS (Dec. 1, 2012), <http://www.nydailynews.com/new-york/new-yorkers-denied-aid-fema-bureaucracy-article-1.1211634>.

<sup>9</sup> See Lister, *supra* note 5; Gary Strauss & Doyle Rice, *‘Frankenstorm’ Sandy a Menace to East Coast*, USA TODAY (Oct. 26, 2012), <http://www.usatoday.com/story/weather/2012/10/26/hurricane-sandy-frankenstorm/1659907/>.

<sup>10</sup> See Lister, *supra* note 5.

<sup>11</sup> See INT’L FED’N OF RED CROSS AND RED CRESCENT SOC’YS, WORLD DISASTERS REPORT 2010: FOCUS ON URBAN RISK 35 (2010) [hereinafter WORLD DISASTERS REPORT].

<sup>12</sup> Jane Lubchenco, *Extreme Weather and a Changing Climate*, CNN (July 24, 2012), <http://www.cnn.com/2012/07/24/opinion/lubchenco-climate/index.html>.

that do not have adequate emergency plans will be unable to cope with the devastation.<sup>13</sup>

In light of these now regularly occurring natural disasters, it is unclear whether the state has a legal duty to prepare, warn, and mitigate natural disaster damages.<sup>14</sup> Part I of this Note provides a background on the past decade of extreme weather, with a specific focus on four disasters that sparked particular outrage over inadequate preparation, warning, and mitigation of damages on the part of the home government—Hurricane Sandy and 2005's Hurricane Katrina in the United States, 2008's Cyclone Nargis in Myanmar, and the 2009 earthquake in L'Aquila, Italy. Part II discusses the principles of a duty to protect, a duty that has never been definitively established but that has been arguably created by both past practice and an international call to action in the area of climate change. Part II also discusses the domestic hurdle of sovereign immunity and the international hurdle of establishing a cognizable cause of action if such a duty has been established. Part III discusses what existing precedent means for both Hurricane Sandy victims and for future victims of natural disaster across the globe if their national governments do not prepare, warn, and mitigate damages adequately. This Note concludes that, given the overwhelming policy implications and the availability of post-disaster victim compensation funds, bringing natural disaster decisions into the legal realm might not create the remedy that many victims anticipate.

## I. BACKGROUND

### A. *Climate Change and Extreme Weather*

The vast majority of the scientific community believes that the climate has changed over the last several decades.<sup>15</sup> A recent report from the U.S. National Oceanic and Atmospheric Administration (NOAA) concluded that the first six months of 2012 were the hottest on record.<sup>16</sup> Over the past three decades, about 1.3 million square miles of Arctic sea ice have disappeared, leading to rising sea levels.<sup>17</sup> The earth

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<sup>13</sup> See WORLD DISASTERS REPORT, *supra* note 11, at 11; Miller, *supra* note 1.

<sup>14</sup> Tyra Ruth Saechao, *Natural Disasters and the Responsibility to Protect: From Chaos to Clarity*, 32 BROOK. J. INT'L L. 663, 665–66 (2007); Jarrod Wong, *Reconstructing the Responsibility to Protect in the Wake of Cyclones and Separatism*, 84 TUL. L. REV. 219, 222–23 (2009).

<sup>15</sup> Flynn, *supra* note 5.

<sup>16</sup> Steven Cohen, *Why We Should Expect More Weather Disasters*, CNN (July 12, 2012), <http://www.cnn.com/2012/07/11/opinion/cohen-extreme-weather>.

<sup>17</sup> Flynn, *supra* note 5; Lister, *supra* note 5.

is getting warmer and scientists link this man-made climate change to the extreme weather of the past decade.<sup>18</sup> “Global warming is making Mother Nature more mischievous” and, as a result, extreme weather events have become more frequent and more dangerous.<sup>19</sup> In a recent international study led by the NOAA, scientists investigated seven instances of extreme weather in 2011 and affirmatively linked six of the seven to climate change caused by human activities.<sup>20</sup>

This man-made climate change has come at a high cost.<sup>21</sup> Natural disasters, unprecedented in size and strength, now hit much more often, and the world has experienced an onslaught in recent years.<sup>22</sup> In the past decade the global community has endured devastating earthquakes and subsequent tsunamis in the South Indian Ocean and Japan; massive earthquakes in Iran, Haiti, and Italy; cyclones in Myanmar and the United States; and colossal hurricanes such as Hurricane Katrina in the Gulf Coast and Hurricane Irene which hit the East Coast a year before Hurricane Sandy.<sup>23</sup> During the year of 2011 alone, fourteen extreme natural occurrences hit the United States, resulting in an extensive loss of life and upwards of \$55 billion in monetary damages.<sup>24</sup> The International Federation of the Red Cross and Red Crescent Societies estimates that earthquakes killed an average of 50,184 people per year from 2000–2008, and that floods affected approximately ninety-nine million people per year.<sup>25</sup>

Given this increase in extreme weather, the Disasters Emergency Committee, which encompasses thirteen international humanitarian aid agencies, warns that the world should prepare for an onslaught of urban disasters.<sup>26</sup> They anticipate that such disasters will be particularly

<sup>18</sup> Lister, *supra* note 5; CNN Wire Staff, *NASA Scientist Links Climate Change, Extreme Weather*, CNN (Aug. 6, 2012), <http://www.cnn.com/2012/08/05/us/climate-change>; see Lubchenco, *supra* note 12.

<sup>19</sup> Flynn, *supra* note 5; Lubchenco, *supra* note 12.

<sup>20</sup> Lubchenco, *supra* note 12.

<sup>21</sup> See WORLD DISASTERS REPORT, *supra* note 11, at 11.

<sup>22</sup> Lister, *supra* note 5.

<sup>23</sup> See WORLD DISASTERS REPORT, *supra* note 11, at 11; Eric Holthaus, *Sandy vs. Irene, How Do the Storms Stack Up?*, WALL ST. J. (Oct. 28, 2012), <http://blogs.wsj.com/metropolis/2012/10/28/hurricane-sandy-vs-irene-how-do-big-storms-stack-up/>; Tom Kington, *L'Aquila's Earthquake-Scarred Streets See Battle Between Science and Politics*, GUARDIAN (Oct. 27, 2012), <http://www.guardian.co.uk/world/2012/oct/27/laquila-earthquake-battle-science-politics>; Claire Provost, *A Decade of Disasters*, GUARDIAN (Mar. 18, 2011), <http://www.guardian.co.uk/global-development/datablog/2011/mar/18/world-disasters-earthquake-data>.

<sup>24</sup> Lubchenco, *supra* note 12.

<sup>25</sup> Provost, *supra* note 23.

<sup>26</sup> *Id.*

devastating for the 950 million people who live in urban slums worldwide.<sup>27</sup> The U.N. Internal Displacement Monitoring System reiterates this finding and reports that these natural disasters will have a greater impact than ever before because the population of the earth has swelled to 7 billion people.<sup>28</sup> The current infrastructure of cities is ill equipped to adapt to the huge increase in population density.<sup>29</sup>

B. *Unparalleled Disaster Strikes and Survivors Are Left with Questions—  
Hurricane Katrina, Cyclone Nargis, & a 6.3 Magnitude  
Earthquake in L'Aquila*

The past decade has had no shortage of devastating natural disasters.<sup>30</sup> Four in particular have raised serious debate about a government's duty to prepare, warn, and mitigate natural disaster damages.<sup>31</sup> Hurricane Katrina devastated the U.S. Gulf Coast in 2005, Cyclone Nargis swept through Myanmar in 2008, a 6.3 magnitude earthquake shook L'Aquila Italy in 2009, and Hurricane Sandy crippled the U.S. East Coast in 2012.<sup>32</sup> In the aftermath of each natural disaster, affected citizens raised serious questions about their home nation's actions.<sup>33</sup>

### 1. Hurricane Katrina Devastates the U.S. Gulf Coast

On August 29, 2005, Hurricane Katrina made landfall on the Gulf Coast of the United States killing 1,833 people, affecting 500,000 people, and costing \$125 million in damage.<sup>34</sup> This category 3 storm swept into the coast with 145 mile per hour winds that wiped out the power to more than one million people.<sup>35</sup> Overwhelming rain and a huge tidal

<sup>27</sup> *Id.*

<sup>28</sup> Cohen, *supra* note 16.

<sup>29</sup> *Id.*

<sup>30</sup> WORLD DISASTERS REPORT, *supra* note 11, at 39.

<sup>31</sup> See Faith J. Jackson, *A Streetcar Named Negligence in a City Called New Orleans—A Duty Owed, a Duty Breached, a Sovereign Shield*, 31 T. MARSHALL L. REV 557, 563 (2006); Wong, *supra* note 14, at 243; John Hooper, *Italian Scientists Convicted for 'False Assurances' Before Earthquake*, GUARDIAN (Oct. 22, 2012), <http://www.theguardian.com/world/2012/oct/22/italian-scientists-jailed-earthquake-aquila>; Vincent Laforet, *Hurricane Katrina*, N.Y. TIMES, [http://topics.nytimes.com/top/reference/timestopics/subjects/h/hurricane\\_katrina/index.html](http://topics.nytimes.com/top/reference/timestopics/subjects/h/hurricane_katrina/index.html) (last updated Sep. 25, 2012).

<sup>32</sup> See Jackson, *supra* note 31, at 563; Wong, *supra* note 14, at 221; Hooper, *supra* note 31; Laforet, *supra* note 31.

<sup>33</sup> See Jackson, *supra* note 31, at 561–62; Wong, *supra* note 14, at 242–46; Laforet, *supra* note 31; Hooper, *supra* note 31.

<sup>34</sup> WORLD DISASTERS REPORT, *supra* note 11, at 39; Laforet, *supra* note 31.

<sup>35</sup> Laforet, *supra* note 31.

surge submerged highways, houses, and whole neighborhoods.<sup>36</sup> The hurricane's twenty-nine-foot storm surge was the highest ever measured in the United States and New Orleans' levees could not handle the pressure.<sup>37</sup> Hundreds of thousands of evacuees were forced to leave, some were rescued on their rooftops, and others were brought to the New Orleans Superdome Stadium to await permanent relocation.<sup>38</sup> Those seeking refuge in the Superdome experienced violence, crime, and subhuman conditions.<sup>39</sup>

In the days after the storm, victims voiced frustration with the state and federal governments' lack of preparation and slow response to help those in need.<sup>40</sup> Experts agree that the "flood protection system in New Orleans was flawed from the start."<sup>41</sup> The U.S. Army Corps of Engineers built the levees to stand up to a model storm that was too simplistic.<sup>42</sup> This shortcoming led to a vulnerable system of levees, floodwalls, storm gates, and pumps.<sup>43</sup> After the infrastructure failed, victims viewed President George W. Bush's emergency response as "too little and too late."<sup>44</sup> Many citizens claim that the government did not respond with equal attention to the poorer sections of the city.<sup>45</sup>

In the aftermath of the backlash and criticism, the head of the Federal Emergency Management Agency (FEMA), Michael Brown, was relieved of his post amid fears within the Bush administration that its delayed response to the disaster would affect the administration's image.<sup>46</sup> Even so, victims were not satisfied and sought legal remedies.<sup>47</sup> In November 2009, a federal district court judge ruled in favor of a group of victims who brought claims against the federal government for poor maintenance of the Mississippi River by the Army Corps of Engineers, whose alleged negligence led to some of the worst flooding

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<sup>36</sup> *Id.*

<sup>37</sup> *Id.*

<sup>38</sup> See *id.*; Kim Murphy, *Recalling Days of Despair in the Superdome*, L.A. TIMES (Aug. 30, 2010), <http://articles.latimes.com/2010/aug/30/nation/la-na-0830-katrina-superdome-20100830>.

<sup>39</sup> Laforet, *supra* note 31.

<sup>40</sup> *Id.*

<sup>41</sup> *Id.*

<sup>42</sup> *Id.*

<sup>43</sup> *Id.*

<sup>44</sup> *Id.*

<sup>45</sup> See Tarak Anada, *The Perfect Storm, an Imperfect Response, and a Sovereign Shield: Can Hurricane Katrina Victims Bring Negligence Claims Against the Government?*, 35 PEPP. L. REV. 279, 282 (2008).

<sup>46</sup> Laforet, *supra* note 31.

<sup>47</sup> See *id.*

after the hurricane.<sup>48</sup> In September 2012, the Fifth Circuit Court of Appeals partially upheld the judgment.<sup>49</sup> Specifically, the court held that the government could not claim immunity under the Flood Control Act on certain claims but could do so on those related to the levee breaches.<sup>50</sup> The city of New Orleans has subsequently installed a \$14.5 billion levee system.<sup>51</sup> This system, like its predecessor, will not stand up to a Category 1 storm with surges of ten to fourteen feet.<sup>52</sup>

## 2. Cyclone Nargis Sweeps Through Myanmar

On May 2, 2008, cyclone Nargis hit southern Myanmar,<sup>53</sup> killing 138,366 people, affecting 2,420,000 people and causing \$4 billion in damage.<sup>54</sup> The damage came in waves.<sup>55</sup> It started when a twelve-foot-high storm surge swept across the Irrawaddy Delta, immediately killing tens of thousands of people, and flooding the villages in its path.<sup>56</sup> Aid arrived almost immediately from the United States, France, and Britain, but the Myanmar government refused to allow foreign helicopters or ships to enter the country.<sup>57</sup> On June 4, 2008, the Pentagon's Pacific Command announced that the Navy's aid ships would turn back after nearly three weeks of waiting off the coast of Myanmar to deliver aid.<sup>58</sup> During those three weeks, the U.S. Navy made at least fifteen attempts to deliver essential and life-saving resources, but the Myanmar government turned them away each time.<sup>59</sup>

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<sup>48</sup> *In re Katrina Canal Breaches Consolidated Litigation*, 647 F. Supp. 2d 644, 644 (E.D. La. 2009) [hereinafter *Katrina I*].

<sup>49</sup> *In re Katrina Canal Breaches Litigation*, 696 F.3d 436, 436 (5th Cir. 2012) [hereinafter *Katrina II*].

<sup>50</sup> *See id.*

<sup>51</sup> Laforet, *supra* note 31.

<sup>52</sup> *Id.*

<sup>53</sup> *Burmese Endure in Spite of Junta, Aid Workers Say*, N.Y. TIMES (June 18, 2008), <http://www.nytimes.com/2008/06/18/world/asia/18myanmar.html?ref=cyclonenargis>.

<sup>54</sup> *See* WORLD DISASTERS REPORT, *supra* note 11, at 35.

<sup>55</sup> Stuart Ford, *Is the Failure to Respond Appropriately to a Natural Disaster a Crime Against Humanity? The Responsibility to Protect and Individual Criminal Responsibility in the Aftermath of Cyclone Nargis*, 38 DENV. J. INT'L L. & POL'Y 227, 227-28 (2010).

<sup>56</sup> *Id.*

<sup>57</sup> *Burmese Endure in Spite of Junta, Aid Workers Say*, *supra* note 53.

<sup>58</sup> Thom Shanker, *Myanmar: Navy Ships to Leave*, N.Y. TIMES (June 4, 2008), <http://www.query.nytimes.com/gst/fullpage.html?res=9C03E2DB123FF937A35755C0A96E9C8B63>.

<sup>59</sup> *Id.*



The twenty-foot waves devastated the land.<sup>60</sup> Nearly 14,000 survivors, who had no homes, families, or livelihoods to return to, sought shelter in nearby monasteries.<sup>61</sup> Nevertheless, within weeks the military evicted these survivors from monasteries and refugee camps, and forced them to return to the destroyed delta to start reconstruction.<sup>62</sup> Junta leader Senior General Than Shwe, assured the United Nations that he would relax his exclusion of foreign aid in order to mitigate the suffering endured by survivors.<sup>63</sup> In fact, the State-run media even spotlighted and praised Shwe as he visited refugee camps and compared his compassion to “parents’ loving kindness and good will toward their offspring.”<sup>64</sup> In reality, however, the junta coordinated no such mitigation.<sup>65</sup>

Relief workers and the international community criticized Myanmar’s refusal to accept foreign aid, the State’s secretive behavior in response to calls for foreign assistance, and the government’s “obsession with security” which resulted in severe restrictions on who was allowed into the country.<sup>66</sup> Citizens, domestic humanitarian agencies, and Burmese monks were left abandoned.<sup>67</sup> The need for pressing, life-saving aid was less than may be expected given the nature of the cyclone, which either killed people immediately or left them uninjured.<sup>68</sup> Because survivors of the cyclone were largely physically unharmed, villages endured without aid for weeks after the cyclone hit.<sup>69</sup> Most of the survivors lived off of coconuts, rotten rice, and rotten fish.<sup>70</sup> In light of the junta’s lack of response and refusal to accept foreign aid, the United States accused the government of “criminal neglect”.<sup>71</sup> Aid workers and citizens in Myanmar privately supported this sentiment, although not many dared to speak out publicly.<sup>72</sup> The country’s military leadership did not tolerate criticism and even sentenced a Bur-

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<sup>60</sup> See *Myanmar Junta Begins Evicting Cyclone Victims from Shelters*, N.Y. TIMES (June 7, 2008), <http://www.nytimes.com/2008/06/07/world/asia/07delta.html?pagewanted=all>.

<sup>61</sup> *Id.*

<sup>62</sup> *Id.*

<sup>63</sup> *Id.*

<sup>64</sup> *Id.*

<sup>65</sup> See *id.*

<sup>66</sup> *Burmese Endure in Spite of Junta, Aid Workers Say*, *supra* note 53.

<sup>67</sup> See *id.*

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

<sup>71</sup> *Id.*

<sup>72</sup> *Id.*

mese comedian to more than forty-five years in prison for his outspoken criticism of the regime's response to the devastation.<sup>73</sup>

Political theorists believe that Myanmar's military generals feared invasion from western countries.<sup>74</sup> Others from the international community felt that the Burmese government did not address the devastation because they feared it would disrupt a vote on the upcoming constitutional referendum that would shift power to the military, which had been scheduled for May 10, 2008.<sup>75</sup> Some believed that the government refused aid because ethnic minorities, who were historically hostile to the military regime, occupied the areas hit hardest by the cyclone.<sup>76</sup> Whatever the reasons, international humanitarian agencies and scholars have questioned whether this refusal of aid amounts to a crime against Myanmar's own people under international law.<sup>77</sup>

### 3. A 6.3 Magnitude Earthquake Shakes L'Aquila, Italy

On April 6, 2009, a major 6.3 magnitude earthquake devastated the medieval town of L'Aquila in the Italian region of Abruzzo, killing more than 300 people and affecting thousands of others.<sup>78</sup> It nearly flattened L'Aquila's historic center, injured upwards of 1,000 people, and left tens of thousands homeless.<sup>79</sup>

In the months before the earthquake hit, the region experienced some 400 tremors, and hundreds of concerned citizens chose to sleep outside in fear for their lives.<sup>80</sup> In the wake of this public panic, Italy's *Commissione Nazionale dei Grandi Rischi* sent a group of seven experts to evaluate the data surrounding the tremors and advise citizens on the

<sup>73</sup> See Sharon Otterman, *Myanmar Gives Comedian 45-Year Sentence for Cyclone Comments*, N.Y. TIMES, Nov. 21, 2008, at A6.

<sup>74</sup> Joseph Zeitlyn, *Life After Nargis*, HIMAL SOUTH ASIAN (June 2009), available at <http://www.himalmag.com/component/content/article/524-life-after-nargis.html>.

<sup>75</sup> Wong, *supra* note 14, at 243 (citing *Voting Proceeds in Myanmar Despite Cyclone's Devastation*, L.A. TIMES, May 11, 2008, at A11).

<sup>76</sup> *Id.* (citing Tim Heinemann, Op-Ed, *A Sinister Sweep: Myanmar Uses Cyclone to Push Out Ethnic Minorities*, CHI. TRIB., May 30, 2008, at C25).

<sup>77</sup> Ford, *supra* note 55, at 227; Wong, *supra* note 14, at 219.

<sup>78</sup> Hooper, *supra* note 31; Elisabetta Povoledo & Henry Fountain, *Italy Orders Jail Terms for 7 Who Didn't Warn of Deadly Earthquake*, N.Y. TIMES, Oct. 22, 2012, at A4; see also Alberto Sisto, *Scientists Sentenced to 6 Years in Jail for Quake Warning Failure*, MSNBC (Oct. 22, 2012), [http://www.nbcnews.com/id/49504719/ns/technology\\_and\\_science-science/t/scientists-sentenced-years-jail-quake-warning-failure/#.UUt-H1vwJlg](http://www.nbcnews.com/id/49504719/ns/technology_and_science-science/t/scientists-sentenced-years-jail-quake-warning-failure/#.UUt-H1vwJlg).

<sup>79</sup> Hooper, *supra* note 31.

<sup>80</sup> Kington, *supra* note 23; Hooper, *supra* note 31; David Ropeik, *The L'Aquila Verdict: A Judgment Not Against Science, but Against a Failure of Science Communication*, SCIENTIFIC AM. (Oct. 22, 2012), <http://blogs.scientificamerican.com/guest-blog/2012/10/22/the-laquila-verdict-a-judgment-not-against-science-but-against-a-failure-of-science-communication/>.

status of their safety.<sup>81</sup> The experts met for several hours, and agreed that the tremors could not help predict whether there would be a major earthquake.<sup>82</sup> They then left town without speaking to citizens at all.<sup>83</sup>

Scientist Guido Bertolaso arranged a community meeting on March 31, 2009, but did not attend.<sup>84</sup> Instead, a local official reported to those present that “the scientific community tells us there is no danger, because there is an ongoing discharge of energy. The situation looks favourable.”<sup>85</sup> Dr. Bernardo De Bernardinis, Deputy Chief of Italy’s Civil Protection Department, even told people to go have a glass of wine.<sup>86</sup> Those sleeping outside were encouraged to go back into their homes because they would be safe.<sup>87</sup> Bertolaso, under investigation for corruption at the time of the meeting, was even recorded during a telephone call telling a local official that the meeting was simply a “media event” to “quiet the imbeciles” who feared a massive earthquake.<sup>88</sup>

Survivor Vincenzo Vittorini recalled his experience at the March meeting, relating that “[d]uring a tremor the day before the meeting, everyone in L’Aquila had run for the streets, but on the night of the fifth, after the meeting, we felt the initial tremors, said ‘this is good, the more the merrier’, and went to bed.”<sup>89</sup> The next morning, he, his wife, and his daughter fell through the floor as their house crumbled and he was pinned down as he heard both his wife and daughter die.<sup>90</sup>

In the aftermath of this disaster, six scientists and one government official were criminally charged with homicide for giving allegedly “incomplete, imprecise and contradictory information” about the danger at the March 31, 2009 meeting.<sup>91</sup> In his closing argument, prosecutor Fabio Picuti even cited U.S. litigation surrounding the Army Corps’ alleged negligence in association with the Hurricane Katrina flooding, arguing the case set a precedent where the government was responsible for falling short of predicting and preventing risk in the wake of natural

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<sup>81</sup> Hooper, *supra* note 31; Kington, *supra* note 23; Ropeik, *supra* note 80.

<sup>82</sup> Hooper, *supra* note 31.

<sup>83</sup> *Id.*

<sup>84</sup> Kington, *supra* note 23.

<sup>85</sup> Hooper, *supra* note 31.

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

<sup>87</sup> *Id.*

<sup>88</sup> *Id.*

<sup>89</sup> Kington, *supra* note 23.

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

<sup>91</sup> Sisto, *supra* note 78 (internal quotation marks omitted).

disaster.<sup>92</sup> On October 22, 2012, these men were convicted of manslaughter in the L'Aquila court and sentenced to six years in prison.<sup>93</sup>

Although victims of the earthquake and their families seemed satisfied, the global scientific community erupted with outrage over the verdict.<sup>94</sup> Scientists warned that they will be reluctant to offer advice on such uncertain things as the risk of natural disasters, and many Italian government scientists resigned in protest.<sup>95</sup> Given the limits of scientific certainty, they believed that the job of scientists was to help assess risks but not to be held accountable for the uncertainties of nature.<sup>96</sup>

#### 4. Hurricane Sandy Cripples the U.S. East Coast

In the wake of Hurricane Sandy, the governors of New York, New Jersey, and Connecticut estimate that the damage from Hurricane Sandy, apart from the cost in human life, will total \$82 billion.<sup>97</sup> New York City's subway system suffered the most extensive damage in its 108-year history, the New York Stock Exchange closed for two consecutive days, and the surf in the New York Harbor reached a record 32.5 feet.<sup>98</sup> Many believe that this damage could have been reduced if the East Coast had been better prepared.<sup>99</sup> In 2007, the American Society of Civil Engineers evaluated New Jersey's infrastructure, and gave it an overall grade of C-.<sup>100</sup> In 2010, a study of New York's infrastructure performed by Guy Nordenson, an architect and structural engineer, concluded that the city was unprepared for the storm surge and wave ac-

<sup>92</sup> Povoledo & Fountain, *supra* note 78.

<sup>93</sup> Sisto, *supra* note 78.

<sup>94</sup> See Hooper, *supra* note 31; Kington, *supra* note 23; Ropeik, *supra* note 80; Sisto, *supra* note 78.

<sup>95</sup> Lawrence Krauss, *Italy Blames the Messengers: Scientists Shouldn't Be Jailed Because They Can't Precisely Predict the Future*, L.A. TIMES (Oct. 26, 2012), <http://articles.latimes.com/2012/oct/26/opinion/la-oe-krauss-earthquake-manslaughter-italy-20121026>.

<sup>96</sup> See *id.*

<sup>97</sup> Flynn, *supra* note 5.

<sup>98</sup> Drash, *supra* note 1; see Colangelo et al., *supra* note 6 (describing a fire sparked by fallen power lines in Breezy Point, Queens, that burned down more than 80 homes).

<sup>99</sup> See Drash, *supra* note 1.

<sup>100</sup> N.J. Section of the Am. Soc. of Civ. Engineers, *2007 Report Card for New Jersey's Infrastructure*, AM. SOC. CIV. ENGINEERS (on file with author). Evaluations of the state of repair and quality of New Jersey's infrastructure were conducted by a committee of eight volunteer practicing and professional civil engineers from across the state. *Id.* Aspects of New Jersey's infrastructure studied and the grades received were: wastewater (D), drinking water (C), dams (C-), energy (C+), aviation (D), ports and navigable waterways (C), roads (D), and bridges (D). *Id.* Additional information on the study's methodology and the significance of letter grades given is outlined in the report. *Id.*

tion that came with a major storm.<sup>101</sup> Experts recommended building higher sea walls, preparing the subway system for flooding by raising entrances, building barrier islands, restoring oyster beds, and installing gates across estuaries.<sup>102</sup>

One of the government's major successes in the wake of Hurricane Sandy was their ability to predict the enormity of the storm, but that ability nearly collapsed before the storm hit.<sup>103</sup> A month before Hurricane Sandy hit the East Coast, the powerful geostationary satellite that monitors the Caribbean and Atlantic oceans, stopped working.<sup>104</sup> Luckily, the NOAA had a backup satellite to "scramble into place."<sup>105</sup> Without this backup satellite, forecasters would have been blind to the impending storm.<sup>106</sup> Nevertheless, in an "era of shrinking budgets," meteorologists are worried that the same backup satellites might not be available for the next storm.<sup>107</sup>

In the days after the storm, many criticized the emergency action plans, access to emergency resources, and restoration of power and functionality.<sup>108</sup> Two months after Hurricane Sandy made landfall near Atlantic City, New Jersey, the new 113<sup>th</sup> Congress approved a \$9.7 billion storm relief measure, and then a \$60.4 billion federal aid package.<sup>109</sup> This federal aid did not come swiftly, and many citizens, including New Jersey Governor Chris Christie, criticized Congress and the Speaker of the House for not delivering faster federal aid.<sup>110</sup>

## II. DISCUSSION

Victims of these four natural disasters in particular are largely dissatisfied with their home government's preparation, warning, and mitigation of damages.<sup>111</sup> Although it is arguable that a duty to protect has been established by past domestic practice, international human rights law, and an international call-to-action in the area of global warming, it

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<sup>101</sup> *Id.*

<sup>102</sup> *Id.*

<sup>103</sup> Escobedo, *supra* note 7.

<sup>104</sup> *Id.*

<sup>105</sup> *Id.*

<sup>106</sup> *See id.*

<sup>107</sup> *Id.*

<sup>108</sup> *See* Leitsinger, *supra* note 8; Smith, *supra* note 8.

<sup>109</sup> Flynn, *supra* note 5.

<sup>110</sup> *See* Michael Grynbaum, *Christie Rebukes G.O.P. for Inaction on Hurricane Relief Bill*, N.Y. TIMES, Jan. 3, 2013, at A23.

<sup>111</sup> *See*, Hooper, *supra* note 31; Laforet, *supra* note 31; Shanker, *supra* note 58; Sisto, *supra* note 78.

is unclear whether such precedent amounts to a legally recognized duty.<sup>112</sup> Furthermore, there are substantial obstacles in the way of getting such a claim into a court in the first place, be it international or domestic, civil or criminal.<sup>113</sup> Victims who might seek relief in international courts face the hurdles of standing, the difficulty of establishing a realistic cause of action, and the reality that States might be reluctant to infringe on another's sovereignty.<sup>114</sup> Victims seeking domestic remedies in the United States must contend with the doctrine of sovereign immunity, the discretionary function exception to government liability, and the lack of both a viable criminal charge or standing to bring actions in criminal court.<sup>115</sup>

### A. Duty and Remedy Under International Law

#### 1. A Duty Under International Human Rights Law and Precedent

The international global community has established a pattern and practice of coming to one another's aid in the wake of natural disaster, both with monetary assistance and on-the-ground humanitarian aid.<sup>116</sup> Individual countries have also established a pattern and practice of preparing themselves and coming to the aid of their citizens once natural disasters strike.<sup>117</sup> Nevertheless, it is not clear if this pattern of action has coalesced into customary international law because no country has yet been held liable under this theory in either an international civil or

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<sup>112</sup> See Anada, *supra* note 45, at 303–04; Wong, *supra* note 14, at 222–23; see also *In re Katrina Canal Breaches Litigation*, 696 F.3d 436, 436 (5th Cir. 2012) [hereinafter *Katrina III*]; *In re Katrina Canal Breaches Consolidated Litigation*, 647 F. Supp. 2d 644, 644 (E.D. La. 2009) [hereinafter *Katrina I*]; Michael Kogut, *Making the Case: Did the Government's Response to Hurricane Katrina Violate the Equal Protection Clause*, 11 SCHOLAR 127, 139, 142–51 (2009); Saechao, *supra* note 14, at 665–66; Wong, *supra* note 14, at 222–23; Sisto, *supra* note 78.

<sup>113</sup> See Casinova O. Henderson, *Hurricane Katrina Victims: A Claim in the International Courts?*, 5 FLA. A & M U. L. REV. 155, 155–56 (2010); Saechao, *supra* note 14, at 668; Wong, *supra* note 14, at 222–23.

<sup>114</sup> See Henderson, *supra* note 113, at 155–56; Saechao, *supra* note 14, at 668; Wong, *supra* note 14, at 222–23.

<sup>115</sup> See Erwin Chemerinsky, *Against Sovereign Immunity*, 53 STAN. L. REV. 1201, 1201–02 (2001).

<sup>116</sup> See Saechao, *supra* note 14, at 655.

<sup>117</sup> See Elisabeth Bumiller, *Bush Pledges Federal Role in Rebuilding Gulf Coast*, N.Y. TIMES (Sept. 16, 2005), [http://www.nytimes.com/2005/09/16/national/nationalspecial/16bush.html?pagewanted=all&\\_r=0](http://www.nytimes.com/2005/09/16/national/nationalspecial/16bush.html?pagewanted=all&_r=0); Bush: 'We Will Do What It Takes,' CNN (Sept. 15, 2005), <http://www.cnn.com/2005/POLITICS/09/15/bush.transcript/>.

criminal proceeding.<sup>118</sup> Instead, legal scholars and disaster victims have tried to equate the duty to protect from natural disaster with recognized State duties under international human rights law.<sup>119</sup>

The foundation for international human rights law comes from a number of different sources.<sup>120</sup> First, the United Nations Charter mandates that Member States take joint and separate action to protect human rights.<sup>121</sup> The 1948 U.N. Universal Declaration of Human Rights confirms this pledge.<sup>122</sup> When the U.N. Charter and Universal Declaration of Human Rights are combined with the U.N. Human Rights Covenants of 1966, they comprise an International Bill of Human Rights.<sup>123</sup> Scholars argue that these non-binding resolutions amount to customary international law, and therefore a binding legal obligation to provide security to one's citizens.<sup>124</sup> These articles expanded upon this duty, clarifying that "sovereign states have a responsibility to protect their own citizens from avoidable catastrophe and outline a responsibility to prevent man-made crises, react to situations of human need, and rebuild harmed areas."<sup>125</sup> Secondly, in the *Corfu Channel Case* of 1949, the International Court of Justice (ICJ) recognized that international obligations towards humanity exist during times of peace.<sup>126</sup>

<sup>118</sup> See Saechao, *supra* note 14, at 655. Three things must be present in order for a norm to be elevated to the status of customary law: A norm, a history of a pattern and practice by States that recognize that norm as binding, and a lack of express rejection of that norm by the acting state. Jose A. Cabranes, *Customary International Law: What It Is and What It Is Not*, 22 DUKE J. COMP. & INT'L L. 143, 148–50 (2011).

<sup>119</sup> See Saechao, *supra* note 14, at 678.

<sup>120</sup> See U.N. CHARTER pmb.; Universal Declaration of Human Rights, G.A. Res. 217 (III) A, U.N. Doc. A/RES/217(III), at 71 (Dec. 10, 1948); Saechao, *supra* note 14, at 670.

<sup>121</sup> U.N. CHARTER pmb.; Universal Declaration of Human Rights, *supra* note 120, at 71; Saechao, *supra* note 14, at 670.

<sup>122</sup> U.N. CHARTER pmb.; Universal Declaration of Human Rights, *supra* note 120, at 71; Saechao, *supra* note 14, at 670.

<sup>123</sup> International Covenant on Economic, Social and Cultural Rights, International Covenant on Civil and Political Rights and optional Protocol to the International Covenant on Civil and Political Rights, G.A. Res. 2200 (XXI), U.N. Doc. A/6316at 49, (Dec. 16, 1966); Saechao, *supra* note 14, at 671.

<sup>124</sup> See Saechao, *supra* note 14, at 670–71. *But see* Winston Hsian, *The Development of Human Rights in the Republic of China on Taiwan: Ramifications of Recent Democratic Reforms and Problems of Enforcement*, 5 PAC. RIM L. & POL'Y J. 161, 164 (1995); Anthea Elizabeth Roberts, *Traditional and Modern Approaches to Customary International Law: A Reconciliation*, 95 AM. J. INT'L L. 757, 785 (2001).

<sup>125</sup> Int'l Comm. on Intervention & State Sovereignty, *The Responsibility to Protect* 10 (2001).

<sup>126</sup> *Corfu Channel*, (U.K. v. Alb.), 1949 I.C.J. 4, 4 (April 9) (holding that Albania was liable for its failure to warn of mines that caused the explosion of British destroyers in the North Corfu Strait); *see also* Saechao, *supra* note 14, at 674.

The most recent addition to the custom of international human rights law was codified in 2005 at the U.N. Sixtieth Anniversary World Summit.<sup>127</sup> The groundbreaking doctrine, the responsibility to protect, provides that when sovereign governments manifestly fail to discharge their primary responsibility to protect their populations from “genocide, war crimes, ethnic cleansing and crimes against humanity,” that responsibility then falls on the wider global community.<sup>128</sup> This national duty includes a responsibility to prevent, react, and rebuild.<sup>129</sup> The doctrine’s drafters intended to address recent instances of genocide and thus deliberately excluded natural disasters from the doctrine’s scope.<sup>130</sup> Nonetheless, many observers speculate that this compromise served to pacify smaller countries concerned for the safety of their sovereignty going forward.<sup>131</sup>

## 2. An Arguable Duty Created by the 1992 United Nations “Earth Summit” and 1997 Kyoto Protocols

By 1990, the Intergovernmental Panel on Climate Change (IPCC), a multinational scientific agency under the control of the United Nations, released a report concerning the status of climate change.<sup>132</sup> The IPCC concluded, “emissions resulting from human activities are substantially increasing the atmospheric concentrations of . . . greenhouse gases [which] will enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface.”<sup>133</sup> In response to this report, the United Nations organized the 1992 “Earth Summit” in Rio de Janeiro.<sup>134</sup>

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<sup>127</sup> 2005 World Summit Outcome, G.A. Res. 60/1, 1, U.N. Doc. A/RES/60/1 (Sept. 16, 2005); Wong, *supra* note 14, at 221.

<sup>128</sup> 2005 World Summit Outcome, *supra* note 118, at 30; Wong, *supra* note 14, at 221.

<sup>129</sup> Wong, *supra* note 14, at 222.

<sup>130</sup> *Id.* The responsibility to protect doctrine was brought to fruition in response to the mass atrocities committed in recent years, specifically genocide in Rwanda. *Id.*

<sup>131</sup> *See id.* at 223. Developing countries voiced their concern and skepticism that this doctrine is a disguise for neo-imperialism and countries will, in practice, invade in the name of “humanitarian” missions. *Id.* at 223, 227. Many argue that the very term “humanitarian intervention” can be linked with concepts of “national aggrandizement,” puppet leaders, and the insertion of governments detested by indigenous populations. *Id.* at 227.

<sup>132</sup> *See Massachusetts v. Envtl. Prot. Agency*, 549 U.S. 497, 508–09 (2007); Intergovernmental Panel on Climate Change [IPCC], *Climate Change: The IPCC Scientific Assessment*, p. xi (J. Houghton, G. Jenkins, & J. Ephraums eds. 1991) [hereinafter *IPCC Scientific Assessment*].

<sup>133</sup> *IPCC Scientific Assessment*, *supra* note 132, at xi; *Envtl. Prot. Agency*, 549 U.S. at 508–09.

<sup>134</sup> *Envtl. Prot. Agency*, 549 U.S. at 509.



The “Earth Summit” sought to help governments “rethink economic development and find ways to halt the destruction of irreplaceable natural resources and pollution of the planet.”<sup>135</sup> The two-week Earth Summit was the synthesis of a plan initiated in December 1989 to bring U.N. Member States together to adopt “a wide-ranging blueprint for action to achieve sustainable development worldwide.”<sup>136</sup> The convention led to the adoption of Agenda 21, a broad plan for action to achieve sustainable development across the globe.<sup>137</sup> The United Nations Framework Convention on Climate Change (UNFCCC), a non-binding agreement between 154 States, aims to reduce greenhouse gases and their dangerous effect on the earth’s climate.<sup>138</sup>

This summit influenced all subsequent U.N. conferences, which have paid particularly close attention to “the relationship between human rights, population, social development, women and human settlements—and the need for environmentally sustainable development.”<sup>139</sup> For instance, the World Conference on Human Rights, held in Vienna in 1993, discussed the right of citizens “to a healthy environment and the right to development, controversial demands that had met with resistance from some Member States until Rio.”<sup>140</sup> Principle 13 of the Earth Summit states:

States shall develop national law regarding liability and compensation for the victims of pollution and other environmental damage. States shall also cooperate in an expeditious and more determined manner to develop further international law regarding liability and compensation for adverse effects of environmental damage caused by activities within their jurisdiction or control to areas beyond their jurisdiction.<sup>141</sup>

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<sup>135</sup> *UN Conference on Environment and Development (1992)*, U.N. (May 23, 1997), <http://www.un.org/geninfo/bp/enviro.html> (last visited Dec. 30, 2013) (outlining the duties that a state has to address development and climate issues, in particular regarding liability and compensation for victims of environmental damage).

<sup>136</sup> *Id.*

<sup>137</sup> *See id.*

<sup>138</sup> *Envtl. Prot. Agency*, 549 U.S. at 509.

<sup>139</sup> *UN Conference on Environment and Development (1992)*, *supra* note 135.

<sup>140</sup> *Id.*

<sup>141</sup> United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on Environment and Development*, at 10, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992).

Five years later, in June 1997, the United Nations organized the Rio+5 Special Session in New York.<sup>142</sup> At the meeting, a joint declaration was issued by Germany, Brazil, South Africa and Singapore to take up the work left to be done on Article 21 which proposed that the U.N. Charter should be amended to incorporate and include sustainable development and environmental protection as two of the United Nations' purposes.<sup>143</sup> By elevating it to such an important status and creating a new umbrella organization to combat environmental issues, these four nations sought to propel the achievement of Article 21.<sup>144</sup>

That same year, the United Nations officially followed up on the Earth Summit with a meeting for all UNFCCC signatories in Kyoto, Japan.<sup>145</sup> During this meeting, States created mandatory numerical targets for industrialized nations to reach in their attempt to reduce their own State's greenhouse gas emissions.<sup>146</sup> These guidelines demand that developed nations decrease their emissions of six designated categories of greenhouse gasses to 5.2% below 1990 levels by 2008-2012, and require that "demonstrable progress" be achieved by 2005.<sup>147</sup> The Kyoto Protocol entered into force on February 16, 2005 when Russia joined 171 other states in ratifying the agreement.<sup>148</sup>

### 3. The Hurdles to International Causes of Action & International Courts

Even if a duty is established, there are significant standing and procedural accessibility issues that vary widely depending on the court where a claim is brought, all of which must be navigated when considering relief through international law.<sup>149</sup> There are also strong policy implications of such action.<sup>150</sup> State sovereignty mandates that each country has a fundamental right to control affairs in its own territory and that affect its own citizens.<sup>151</sup> The new, modern interpretation of

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<sup>142</sup> Chad Wallace, *Joint Declaration at Rio+5 Calls for Sustainable Development*, 1997 COLO. J. INT'L ENVTL. L. & POL'Y 99, 99-100.

<sup>143</sup> *See id.*

<sup>144</sup> *See id.*

<sup>145</sup> *Climate Change Litigation Overview*, SN005 ALI-ABA 687, 705-06.

<sup>146</sup> *Envtl. Prot. Agency*, 549 U.S. at 509.

<sup>147</sup> *Climate Change Litigation Overview*, *supra* note 145, at 705-06.

<sup>148</sup> *See id.*

<sup>149</sup> *See Henderson*, *supra* note 113, at 155-56.

<sup>150</sup> Saechaeo, *supra* note 14, at 668.

<sup>151</sup> *Id.*

State sovereignty incorporates the idea that this status is dependent upon the States' recognition of obligations to their people.<sup>152</sup>

Further, in the criminal context, only the Office of the Prosecutor has the authority to bring criminal charges in the International Criminal Court (ICC), or another criminal tribunal.<sup>153</sup> The criminal cause of action for "crimes against humanity" is codified in Article 7(1) of the Rome Statute of the International Criminal Court, and requires that there be a widespread, systematic attack directed against a civilian population.<sup>154</sup> It is within the discretion of the Office of the Prosecutor to initiate an investigation and bring charges, although it will respond to requests by nations to investigate in certain circumstances.<sup>155</sup>

Despite these hurdles, a path has been paved.<sup>156</sup> In *Nicaragua v. U.S.*, the ICJ held that "[t]here can be no doubt that the provision of strictly humanitarian aid [such as food, clothing, and medicine] to persons or forces in another country, whatever their political affiliations or objectives, cannot be regarded as unlawful intervention, or as in any other way contrary to international law."<sup>157</sup> In its opinion, the ICJ found this duty imperative in order to "prevent and alleviate human suffering," "to protect life and health," and to "ensure respect for the human being," and that this obligation was to be given "without discrimination" to all in need.<sup>158</sup> Given this holding, observers have inferred that the ICJ requires the same relief for natural disaster victims, provided that the aid offered is for purely humane purposes.<sup>159</sup>

This doctrine of a duty to protect from natural disaster, while not addressed directly, relies on an established premise that states are responsible not only for their own action, but also for the protection of their citizens from private action that affects human rights.<sup>160</sup> For ex-

<sup>152</sup> *Id.* at 669.

<sup>153</sup> Rome Statute of the International Criminal Court, art. 15, July 17, 1998, 2187 U.N.T.S. 90.

<sup>154</sup> *Id.* art. 7(1).

<sup>155</sup> *Id.* art. 15.

<sup>156</sup> See *Nicar. v. U.S.*, 1986 I.C.J. 4, 114 (June 27, 1986); *Budayeva v. Russia*, Apps. No. 15339/02, 21166/02, 20058/02, 11673/02 & 15343/02, Eur. Ct. H.R. ¶ 159 (Mar. 20, 2008), <http://hudoc.echr.coe.int/sites/eng/pages/search.aspx?i=001-85436>.

<sup>157</sup> *Nicar. v. U.S.*, 1986 I.C.J. 4, 114; see also Saechaeo, *supra* note 14, at 674.

<sup>158</sup> *Id.*

<sup>159</sup> *Id.* at 125; Saechaeo, *supra* note 14, at 687.

<sup>160</sup> John H. Knox, *Linking Human Rights and Climate Change at the United Nations*, 33 HARV. ENVTL. L. REV. 477, 490–91 (2009); see High Comm'r for Human Rights, *Rep. of the Office of the U.N. High Comm'r for Human Rights on the Relationship Between Climate Change and Human Rights*, 20, U.N. Doc. A/HRC/10/61 71 (Jan. 15, 2009) [hereinafter *Report on Climate Change and Human Rights*].

ample, in *Budayeva v. Russia*, the European Court of Human Rights found that Russia had not implemented policies and protective measures to shield inhabitants of a region prone to deadly mudslides because the government had not maintained dams or observation posts to provide timely warnings.<sup>161</sup> The court found that Russia failed to “discharge the positive obligation to establish a legislative and administrative framework designed to provide effective deterrence against threats to the right to life as required by Article 2” of the European Convention on Human Rights, and therefore they had violated the Convention.<sup>162</sup>

### B. Duty and Remedy Under U.S. Domestic Law

#### 1. A Duty to Protect Under U.S. Domestic Law

In order to establish that the U.S. government breached its duty to protect, it must first be established that the U.S. government does in fact have an affirmative duty to protect its citizens from natural disaster.<sup>163</sup> On Thursday September 15, 2005, President George W. Bush articulated this duty in a speech he made from Jackson Square in the French Quarter of New Orleans seventeen days after Hurricane Katrina hit the Gulf Coast:

The government of this nation will do its part as well. Our cities must have clear and up-to-date plans for responding to natural disasters, disease outbreaks or terrorist attack[s]—for evacuating large numbers of people in an emergency and for providing the food, water and security they would need . . . . Yet the system at every level of government, was not well coordinated and was overwhelmed in the first few days. It is now clear that a challenge on this scale requires greater federal authority and a broader role for the armed forces—the institution of our government most capable of massive logistical operations on a moment’s notice.<sup>164</sup>

The Preamble to the U.S. Constitution also seems to establish such a duty to the citizens of the United States.<sup>165</sup> The promises to “insure domestic Tranquility, provide for the common defense, [and] promote

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<sup>161</sup> *Budayeva v. Russia*, App. Nos. 15339/02, 21166/02, 20058/02, 11673/02 & 15343/02, ¶ 159.

<sup>162</sup> *Id.*

<sup>163</sup> Anada, *supra* note 45, at 303.

<sup>164</sup> See Bumiller, *supra* note 117.

<sup>165</sup> See U.S. CONST. pmbll.; Anada, *supra* note 45, at 318–19.

the general Welfare” are thought by many scholars to include a duty to protect from natural disasters.<sup>166</sup> In fact, throughout the country’s history, both federal and state governments have acted to protect their citizens in the wake of natural disasters, from earthquakes and tsunamis to hurricanes and mudslides.<sup>167</sup> A significant amount of annual state and federal budgetary money and resources fund police departments, fire departments, and emergency services from FEMA to the Department of Homeland Security.<sup>168</sup>

## 2. Doctrine of Sovereign Immunity in the United States and the Discretionary Function Exception to Liability

Even if a duty to protect is established, the doctrine of sovereign immunity stands in the way of any victims looking to bring suit.<sup>169</sup> The United States inherited this doctrine from English law, which established the idea that “the King can do no wrong.”<sup>170</sup> Justice Holmes explained the doctrine as a practical conclusion drawn from the idea that the sovereign creates the law and is therefore “exempt from suit, not because of any formal conception or obsolete theory, but on the logical and practical ground that there can be no legal right as against the authority that makes the law on which the right depends.”<sup>171</sup> The U.S. Supreme Court has “unquestionably” found that sovereign immunity, particularly for state governments, is a constitutional requirement.<sup>172</sup>

Sovereign immunity is discussed in two places in the U.S. Constitution.<sup>173</sup> Article III, section 2 provides original jurisdiction to the Supreme Court for cases involving controversies to which the United States is a party.<sup>174</sup> The extension of Sovereign Immunity to the states is addressed in the Eleventh Amendment.<sup>175</sup> The federal government is therefore immune from tort liability without its consent, and it did not

<sup>166</sup> U.S. CONST. pmbl.; Anada, *supra* note 45, at 318–19.

<sup>167</sup> See Anada, *supra* note 45, at 318.

<sup>168</sup> *Id.* at 321.

<sup>169</sup> See Chemerinsky, *supra* note 115 at 1201–02.

<sup>170</sup> *Id.* at 1202; see Jonathan Jorissen, Note, *Katrina’s House: The Constitutionality of the Forces Removal of Citizens from Their Homes in the Wake of Natural Disasters*, 5 AVE MARIA L. REV. 587, 592 (2007).

<sup>171</sup> *Kawananakoa v. Polyblank*, 205 U.S. 349, 353 (1907).

<sup>172</sup> Chemerinsky, *supra* note 115, at 1203.

<sup>173</sup> See U.S. CONST. art. III, § 2, amend. XI; Chemerinsky, *supra* note 115, at 1203.

<sup>174</sup> See U.S. CONST. art. III, § 2.

<sup>175</sup> See U.S. CONST. amend. XI (“The Judicial power of the United States shall not be construed to extend to any suit in law or equity, commenced or prosecuted against one of the United States by Citizens of another State or by Citizens or Subjects of any Foreign State.”).

give its consent until the Federal Tort Claims Act of 1949, which carved out an exception to the doctrine under certain circumstances.<sup>176</sup>

The Federal Tort Claims Act (FTCA) is the principal legislation by which the federal government has waived its insulation from liability under sovereign immunity.<sup>177</sup> This act makes the federal government liable for actions against a government employee acting within the scope of his office or employment, unless the person's decision was a "discretionary function" of his or her job.<sup>178</sup> The government still has immunity when the decision was discretionary, and the Supreme Court in *Berkovitz ex rel. Berkovitz v. United States* developed a two-pronged test for determining what is "discretionary."<sup>179</sup> First, a court must decide whether the contested governmental action involved an element of judgment by the government actor, and second, the judgment must be the type of decision the discretionary function doctrine was designed to shield.<sup>180</sup> The Flood Control Act of 1928 also creates immunity for damage from or by floods or floodwaters at any place.<sup>181</sup> Nevertheless, in *United States v. James*, the court discussed the possibility of finding an exception to this immunity depending on the specific action.<sup>182</sup>

The Constitution does not expressly mention guidelines for times of national crisis or environmental disaster.<sup>183</sup> The Robert T. Stafford Disaster Relief and Emergency Act of 1988, however, empowers the government to provide for the "provision of health and safety measures" and the "management, control, and reduction of immediate threats to public health and safety."<sup>184</sup> The Act outlines the procedures and policies for coordinating emergency response at the federal and local level, as well as the rights of the governments in such emergencies.<sup>185</sup>

In the aftermath of natural disasters in the United States—from hurricanes to volcanoes—citizens have tried to bring suit against the government for their actions in the wake of the disaster, but the discretionary function doctrine has barred their success.<sup>186</sup> In the 1992 case

<sup>176</sup> Anada, *supra* note 45, at 306.

<sup>177</sup> Federal Tort Claims Act, 28 U.S.C. § 1346(b) (2012); *Katrina I*, 647 F. Supp. 2d at 647; Anada, *supra* note 45, at 306.

<sup>178</sup> 28 U.S.C. § 1346(b); Anada, *supra* note 45, at 307.

<sup>179</sup> 486 U.S. 531, 536 (1988); Anada, *supra* note 45, at 307–08.

<sup>180</sup> *Berkovitz*, 486 U.S. at 536.

<sup>181</sup> Flood Control Act, 33 U.S.C. § 702(c) (2012); Anada, *supra* note 45, at 307–08.

<sup>182</sup> 478 U.S. 597, 609–10 (1986).

<sup>183</sup> Jorissen, *supra* note 170, at 590.

<sup>184</sup> 42 U.S.C. § 5170(a)(3)(D)–(E) (2012).

<sup>185</sup> *See id.* §5 170(a).

<sup>186</sup> *See, e.g., Freeman v. United States*, 556 F.3d 326 (5th Cir. 2009) (holding that discretionary function exception to the Robert T. Stafford Disaster Relief and Emergency Assis-

*Cougar Business Owners Association v. Washington*, the Washington Supreme Court found that it was discretionary when the state of Washington declared a volcanic state of emergency and included the town in question as part of the “restricted zone.”<sup>187</sup> The suit was brought against the State of Washington and its governor for prematurely declaring a volcanic emergency, for including a particular town in the “red zone” that should not have been included, and for failing to correct the designation in a timely manner.<sup>188</sup> Even if an action does not fall under the non-discretionary exception to sovereign immunity, courts have still allowed citizens to sue the government in cases of constitutional violations.<sup>189</sup> Four years earlier, the Washington Supreme Court made a similar determination in *Karr v. State of Washington*, a wrongful death suit brought by the administrator of the decedent’s estate after she was killed in the eruption of Mount St. Helens.<sup>190</sup> The court concluded that it was within the discretionary function of the state to implement safety zones that closed certain areas around Mount St. Helens in the wake of the danger.<sup>191</sup>

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tance Act barred suits based on the federal governments handing of relief efforts in the aftermath of Hurricane Katrina); *St. Tammany Parish v. Federal Emergency Mgmt. Agency*, 556 F.3d 307 (5th Cir. 2009) (holding that FEMA was protected by discretionary function of Stafford Act in allegations that it failed to provide full funding for debris removal from private canals in parish following hurricane); *Nat’l Union Fire Ins. v. United States*, 115 F.3d 1415 (9th Cir. 1997) (holding discretionary function exception to FTCA applied to decision by Army Corps of Engineers to put off smaller improvement to breakwater while studying possibility of larger improvement); *Dunaway v. United States*, 136 F. Supp.2d 576 (E.D. La 1999) (holding that U.S. Army Corps of Engineers’ decision not to warn of, mark, or remove sandbar fell squarely within discretionary function exception to the Federal Torts Claims Act); *Anderson v. Miami-Dade County*, 36 So. 3d 674, (Fla. 2010) (unpublished) (upholding district court finding that county cannot be held liable for its determination of how to recover from natural disaster, Hurricane Wilma).

<sup>187</sup> 647 P.2d 481, 488–89 (Wash. 1992).

<sup>188</sup> Jorissen, *supra* note 170, at 593.

<sup>189</sup> *Arcoren v. Peters*, 811 F.2d 392, 393, 400 (8th Cir. 1987) (“[I]t has been settled that, under some circumstances . . . a person whose clearly established constitutional rights are violated by federal officials may sue them directly even though no legislation by Congress exists specifically authorizing such a remedy.”).

<sup>190</sup> *Karr v. Washington*, 765 P.2d 316, 317 (Wash. 1988) (holding that wrongful death action against state for woman killed in eruption of Mount St. Helens was barred by discretionary function).

<sup>191</sup> *Id.*

C. *Legal Remedies Sought in the Aftermath of Hurricane Katrina, Cyclone Nargis, and the L'Aquila Earthquake*

I. Hurricane Katrina Victims: Civil Negligence, an Alleged Violation of Equal Protection, and an Alleged Crime Against Humanity

Three potential legal claims were proposed in the aftermath of Hurricane Katrina.<sup>192</sup> The first were a series of civil actions raised in response to the U.S. government's failure to adequately prepare in terms of flood control and navigation.<sup>193</sup> The second were equal protection violations on the part of citizens in the poorer areas of New Orleans, including those forced into the Superdome, because they were not able to evacuate.<sup>194</sup> The third, purely speculative, legal claims were that the government's actions equated to a crime against humanity under international law.<sup>195</sup>

Domestic civil claims have been the most viable in the post-Katrina legal landscape.<sup>196</sup> In November 2009, Judge Stanwood Duval, Jr. held that the Army Corps of Engineers was liable for poor maintenance of a major navigation channel, namely the Mississippi River.<sup>197</sup> Four years after the storm, this ruling "vindicated" the long-held belief by the citizens of the Gulf area that the flooding was far more than an act of God.<sup>198</sup> Though the government is generally immune from flooding claims, the court held that the resulting damage resulted from problems with navigational preparation and not flood control measures.<sup>199</sup>

Judge Duval found that the purpose of the Corps' actions was to facilitate navigation and not prepare for flooding and that this purpose did not fall within the scope of the Flood Protection Act's immunity.<sup>200</sup> The government appealed the decision, and in September 2012, the Court of Appeals for the Fifth Circuit held that the government could not claim immunity under the Flood Control Act on claims relating to the dredging of the Mississippi River Gulf Outlet, but was immune under the same act for levee breaches caused by the dredging of the canal.<sup>201</sup> Nevertheless, the court ruled that the government was liable for

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<sup>192</sup> *Katrina II*, 696 F.3d at 436; Henderson, *supra* note 113; Kogut, *supra* note 112.

<sup>193</sup> *Katrina I*, 647 F. Supp. 2d at 697; *Katrina II*, 696 F.3d at 447.

<sup>194</sup> Kogut, *supra* note 112, at 139, 142–51.

<sup>195</sup> Henderson, *supra* note 113, at 155–56.

<sup>196</sup> See *Katrina I*, 647 F. Supp. 2d at 697; *Katrina II*, 696 F.3d at 447.

<sup>197</sup> *Katrina I*, 647 F. Supp. 2d at 697.

<sup>198</sup> Laforet, *supra* note 31.

<sup>199</sup> *Katrina II*, 696 F.3d at 444.

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

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



some of the flooding.<sup>202</sup> The court said, “on account of flood-control activity or negligence therein . . . Some Hurricane Katrina-related flooding was caused not by flood-control activity (or negligence therein) but by MRGO, a navigational channel whose design, construction, and maintenance cannot be characterized as flood-control activity. Therefore, the FCA does not immunize the government against liability for that flooding.”<sup>203</sup>

Other plaintiffs have not been able to navigate around sovereign immunity.<sup>204</sup> In *Freeman v. U.S.*, relatives and representatives of Hurricane Katrina victims filed suit against the United States for wrongful death.<sup>205</sup> They claimed that the government acted negligently in failing to perform nondiscretionary duties arising under the National Response Plan (NRP) in the aftermath of Hurricane Katrina.<sup>206</sup> The decedents had decided to stay in their homes as the storm approached due to their impaired mobility.<sup>207</sup> Two of the decedents were eventually evacuated to a convention center after being abandoned and injured in their flooded homes for days.<sup>208</sup> The convention center was not equipped with food, water, medical assistance, triage or transportation.<sup>209</sup> Their families attempted to get them help but they died at the convention center untreated.<sup>210</sup> Plaintiffs alleged that the terrible conditions in the convention center were not the result of the discretionary exception, but instead the result a lack of action on behalf of the government in carrying out the NRP’s Catastrophic Incident Annex.<sup>211</sup> Nevertheless, the court disagreed and dismissed the case on the grounds that the NRP, and other authorities leave policy-related choices and judgments under these guidelines to those involved in federal agencies.<sup>212</sup> The decision was therefore discretionary in nature.<sup>213</sup>

In the aftermath of Hurricane Katrina, courts have also held that the use and management of government funds in the wake of disaster management and preparation is discretionary.<sup>214</sup> In *St. Tammany Parish*

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<sup>202</sup> *Id.*

<sup>203</sup> *Id.*

<sup>204</sup> *Freeman*, 556 F.3d at 328; *St. Tammany Parish*, 556 F.3d at 307.

<sup>205</sup> *Freeman*, 556 F.3d at 328.

<sup>206</sup> *See id.*

<sup>207</sup> *Id.*

<sup>208</sup> *Id.*

<sup>209</sup> *Id.* at 329.

<sup>210</sup> *Id.*

<sup>211</sup> *Id.* at 330.

<sup>212</sup> *Id.* at 341.

<sup>213</sup> *See id.*

<sup>214</sup> *See St. Tammany Parish*, 556 F.3d at 307.

*v. Federal Emergency Management Agency*, plaintiffs brought an action against FEMA for its decision not to provide full funding for debris removal from private canals following Hurricane Katrina.<sup>215</sup> The court found that the government had not waived its sovereign immunity under the Stafford Act because the decision about how to allocate money and resources was a discretionary function.<sup>216</sup> Such a precedent has major implications for victims seeking to bring suit under the claim that the government did not use their funds in a way to adequately protect or mitigate damages.<sup>217</sup>

Next, legal scholars have voiced the possibility of bringing equal protection claims against the federal government, specifically alleging that the poorest of New Orleans' residents were not offered the same protection and help after the storm as other residents.<sup>218</sup> One scholar compares the plight of the under-privileged African American population in New Orleans before Hurricane Katrina hit to the slaves in Pompeii before Mount Vesuvius erupted, because both were unable to evacuate before the storm hit due to a lack of resources.<sup>219</sup> The 9<sup>th</sup> Ward, a neighborhood of New Orleans situated below sea level, was 98 percent African American and did not have access to the automobiles that were crucial to FEMA's pre-hurricane evacuation plan.<sup>220</sup> Those left behind were left without help for days.<sup>221</sup> When help did finally arrive, survivors were directed to shelters that were unsafe and unsanitary, specifically the Superdome and New Orleans Convention Center.<sup>222</sup> On the morning of August 30, 2005, the U.S. Department of Health and Human Services assessed the Superdome as "uninhabitable."<sup>223</sup>

The third and final theoretical claim is that the U.S. government's actions and failures resulted in a crime against humanity.<sup>224</sup> This claim would allege that the U.S. government did not adequately prepare and warn citizens located in the Gulf Coast, did not implement policies to protect and mitigate damages after the devastation, and that this inaction caused severe death and injury to Hurricane Katrina victims.<sup>225</sup>

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<sup>215</sup> *Id.*

<sup>216</sup> *See id.* at 325–26.

<sup>217</sup> *See id.*

<sup>218</sup> Kogut, *supra* note 112, at 143.

<sup>219</sup> *Id.*

<sup>220</sup> *Id.* at 144.

<sup>221</sup> *See id.* 145–46.

<sup>222</sup> *Id.* at 146.

<sup>223</sup> Henderson, *supra* note 113, at 174.

<sup>224</sup> *Id.* at 155.

<sup>225</sup> *See id.* at 156, 175.

## 2. Myanmar Victims: An Alleged International Crime Against Humanity

After Cyclone Nargis struck Myanmar, the already dire situation deteriorated further as the junta refused to allow foreign aid to reach victims, confiscated food shipments from the World Food Program, intercepted U.N. shipments, and turned away planes with foreign aid workers and press.<sup>226</sup> With foreign aid turned away, French Foreign Minister Bernard Kouchner voiced the need to implement the responsibility to protect doctrine in order to authorize the delivery of aid over the junta's resistance.<sup>227</sup> A spokesperson for the World Food Program noted that this behavior was "unprecedented in modern humanitarian relief efforts."<sup>228</sup>

Although Myanmar eventually accepted aid, its significant delay subjected 2.5 million survivors to hunger, exposure, and disease.<sup>229</sup> Although no legal action was taken against the government, many countries called for military intervention on behalf of Myanmar's citizens as their government refused aid.<sup>230</sup> Alongside Foreign Minister Kouchner's call for action through the U.N. responsibility to protect doctrine, French ambassador to the U.N., Jean-Maurice Ripert requested that the Security Council call for a humanitarian briefing.<sup>231</sup> Myanmar strenuously opposed any such action by means of the responsibility to protect doctrine.<sup>232</sup> Myanmar's top diplomats characterized France's outcries as a "blatant politicization" of a humanitarian crisis, and warned that it would set a "dangerous precedent."<sup>233</sup> Myanmar's Charge d'Affaires, Muang Muang, declared that the responsibility to protect doctrine "was aimed to prevent genocide, not for use in times of natural disasters."<sup>234</sup>

## 3. Abruzzo Victims: Criminal Manslaughter for Inadequately Warning

At the beginning of the homicide trial against six scientists and one government official in L'Aquila's district court in September, 2012, Italian prosecutor Fabio Picuti told *Nature*, "I'm not crazy. I know they

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<sup>226</sup> Wong, *supra* note 14, at 242.

<sup>227</sup> *Id.* at 244–45.

<sup>228</sup> *Id.* at 242–43.

<sup>229</sup> *Id.* at 243.

<sup>230</sup> *See id.* at 259.

<sup>231</sup> *Id.* at 244–45.

<sup>232</sup> *Id.* at 245.

<sup>233</sup> *Id.*

<sup>234</sup> *Id.*

can't predict earthquakes."<sup>235</sup> Judge Giuseppe Romano Gargarella reiterated that distinction, saying that the issue was whether or not "the defendants 'gave inexact, incomplete and contradictory information.'"<sup>236</sup> The crux of the trial did not rest on earthquake prediction but risk communication.<sup>237</sup> The six scientists sent to evaluate the seismic activity never actually communicated directly with or to the public about the possibility of an earthquake.<sup>238</sup> Defendant Bernardo De Bernardinis, a government official who was not a seismologist, was the only defendant who actually communicated with citizens.<sup>239</sup>

Nevertheless, the court found the defendants guilty of negligent homicide in violation of their duties as official ministers of the government for giving generic, general, and ineffective information to the citizens of L'Aquila at a general meeting held on March 31, 2009.<sup>240</sup> In finding this liability, the court held the defendants to the standard of a model agent, requiring a certain level of diligence in evaluating the risk and severity of the danger given their knowledge and technical training.<sup>241</sup> A "model agent" is expected to acquire all knowledge to carry out his responsibility, both what he believes to be likely but also every possible foreseeable outcome.<sup>242</sup> In other words, a "model agent" issuing a warning must not limit himself to the outcome he expects will happen, but must warn of all possible outcomes.<sup>243</sup>

A "model agent" must not be judged as a normal man, but as a member of a category of "expert men" with a superior duty and knowledge.<sup>244</sup> Acting as a group, these defendants engaged in a collective culpable action when they failed as a collective agent to adequately warn the citizens of L'Aquila about the possible risks of the tremors and instead advised them to return to their houses.<sup>245</sup> Their general and ineffective warnings about the risks to the residents of the region to the citizens and mayor of L'Aquila were inconsistent with the behavior of a

<sup>235</sup> Andre Mayer, *Italian Quake Ruling Rattles Global Science Community Court Convicts Group of Scientists of Manslaughter for Inadequate Quake Information*, CBC News (Oct. 24, 2012), <http://www.cbc.ca/news/world/story/2012/10/23/E-earthquake-prediction-italy.html>.

<sup>236</sup> *Id.*

<sup>237</sup> Trib. Di L'Aquila, *Diritto Penale Contemporaneo*, n. 253/10 R.G.N.R., 25; Mayer, *supra* note 235.

<sup>238</sup> Trib. Di L'Aquila, at 25.

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

<sup>240</sup> *Id.* at 2, 884.

<sup>241</sup> *Id.* at 884.

<sup>242</sup> *Id.* at 885.

<sup>243</sup> *See id.* at 887–88.

<sup>244</sup> *See id.*

<sup>245</sup> *See id.* at 892–93.

“model agent.”<sup>246</sup> The court concluded by listing civil damages, and found the defendants personally and collectively liable for the damages.<sup>247</sup>

### III. ANALYSIS

Not only did the four natural disasters described above receive international attention, but the global community also erupted with outspoken reactions to the governmental action or lack thereof.<sup>248</sup> Most of this attention centered on policy questions relating to finding civil or criminal liability in the actions revolving around natural disasters that are seemingly out of human control.<sup>249</sup> That precedent leaves many critics questioning the practical implications of such a precedent and debating if a better forum for natural disaster grievances than a courtroom exists, and, if so, whether it is in victim relief and compensation funds.<sup>250</sup>

Perhaps national and world leaders will follow in the footsteps of human rights and environmental summits by affirmatively declaring and voting on fair duties and procedures that they will follow in light of the new global reality concerning extreme natural disasters and create a legal forum and cause of action for grievances.<sup>251</sup> Because experts agree that super-storms and extreme natural disasters have become a constantly worsening phenomenon, the necessary standard of care also seems to be constantly evolving and intensifying.<sup>252</sup> When balancing practical limits imposed by budgets and human resource capabilities, this leaves States in the vulnerable position of having to constantly de-

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<sup>246</sup> *Id.* at 25.

<sup>247</sup> *Id.* at 915–42.

<sup>248</sup> See Hooper, *supra* note 31; Laforet, *supra* note 31; Sisto, *supra* note 78.

<sup>249</sup> See Povoledo & Fountain, *supra* note 78; Campbell Robertson, *Ruling on Katrina Flooding Favors Homeowners*, N.Y. TIMES, NOV. 18, 2009, at A1.

<sup>250</sup> See Krauss, *supra* note 95; Povoledo & Fountain, *supra* note 78; Robertson, *supra* note 249; Sisto, *supra* note 78.

<sup>251</sup> Cf. United Nations Conference on Environment and Development, Rio de Janeiro, Braz., June 3–14, 1992, *Rio Declaration on Environment and Development*, at 10, U.N. Doc. A/CONF.151/26/Rev.1 (Vol. I), Annex I (Aug. 12, 1992) (outlining the duties that a state has to address development and climate issues, in particular regarding liability and compensation for victims of environmental damage); U.N. Conference on Environment and Development (1992), *Earth Summit* U.N., <http://www.un.org/geninfo/bp/enviro.html> (last visited Nov. 15, 2013) (outlining a remedy for claims and creating an international response would be a perfect model by which to address climate change and extreme natural occurrences).

<sup>252</sup> See Cohen, *supra* note 16.

vote precious resources to the possibility of worsening disasters while real time needs might be neglected by this diversion of funds.<sup>253</sup>

A. *Can a State Possibly Keep Up with Constantly Worsening Disasters and Could Those Resources Be Better Spent on Day-to-Day Needs?*

In the days after Hurricane Sandy, New York Governor Andrew Cuomo told reporters that, “[a]fter what happened, what has been happening in the last few years, I don’t think anyone can sit back anymore and say ‘Well, I’m shocked at that weather pattern.’”<sup>254</sup> Many agreed that there was much more that could have been done in the wake of Hurricane Sandy.<sup>255</sup> Critics have been outspoken in saying that, as a nation, the United States should be embracing “proven cost-effective measures that will reduce the harm that disasters cause and bolster the speed in which communities can recover.”<sup>256</sup>

These commentators suggest that there are a number of precautionary measures governments can implement.<sup>257</sup> Guy Nordenson, working with New York’s Mayor Bloomberg, hopes to execute a project with the Port Authority of New York and New Jersey to begin using dredged material for natural barriers.<sup>258</sup> In addition, experts have drafted plans to prepare backup options if ocean saltwater brought by these massive storms ruins drinking water.<sup>259</sup> They have also developed plans to raise subway entrances and reinforce lower floors of buildings.<sup>260</sup>

Many of these plans have been tried previously, but did not provide the intended result.<sup>261</sup> On the seventh anniversary of Hurricane Katrina, the newly reinforced, post-Katrina New Orleans infrastructure was put to the test as Tropical Storm Isaac roared into the Gulf Coast.<sup>262</sup> New Orleans Mayor Mitch Landrieu told reporters that, “[t]here is

<sup>253</sup> *See id.*

<sup>254</sup> Lister, *supra* note 5.

<sup>255</sup> *Id.*

<sup>256</sup> Flynn, *supra* note 5.

<sup>257</sup> *Id.* at 3.

<sup>258</sup> Lister, *supra* note 5.

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

<sup>260</sup> *Id.*

<sup>261</sup> *See* CNN Wire Staff, *Isaac Poised for Gulf Landfall Near Katrina Anniversary*, CNN (Aug. 28, 2012), <http://www.cnn.com/2012/08/27/us/tropical-storm-isaac/>; Bryan Walsh, *IPCC Report: Global Warming—and Changing Population—Will Worsen the Toll of Extreme Weather*, TIME (Nov. 18, 2011), <http://science.time.com/2011/11/18/ipcc-report-global-warming-and-changing-population-will-worsen-the-toll-of-extreme-weather/>; CNN Wire Staff, *supra* note 18; Laforet, *supra* note 31.

<sup>262</sup> *See Isaac Poised for Gulf Landfall Near Katrina Anniversary, supra* note 261.

nothing this storm will bring us that we are not capable of handling.”<sup>263</sup> Landrieu assured residents that the levees had \$10 billion in improvements since 2005 and that the city's pump stations were equipped with backup generators ready in case of electrical outages.<sup>264</sup> Mississippi officials dispatched 1,500 National Guard troops to serve in the state's three southern counties in preparation for Hurricane Isaac, and distributed 10,000 sandbags to residents.<sup>265</sup>

Mississippi Governor Phil Bryant assured citizens that, “[i]n short, we have done everything in our power to be prepared for the storm.”<sup>266</sup> If Tropical Storm Isaac was not in fact a tropical storm but rather a storm even more powerful than Hurricane Katrina, and if residents heeded those warnings and did not adequately evacuate or prepare, the question remains to what degree the government should be held responsible.<sup>267</sup> Given the amount of money New Orleans invested in preparations after Hurricane Katrina, policy implications demand a consideration of how much further the obligations of a duty to protect forces a government to go in order to prepare for constantly worsening storms.<sup>268</sup> There is also a question of the standard to which poorer countries without the resources to adequately prepare should be held.

The next consideration is to determine what kinds of damage a State is responsible for preparing to mitigate.<sup>269</sup> Does every part of the country have to prepare for every disaster?<sup>270</sup> In June 2011, multiple tornadoes ripped through western and central Massachusetts, destroying urban areas, flipping vehicles and leaving three people dead and 200 injured.<sup>271</sup> At least three tornadoes struck the city of Springfield alone, which has more than 150,000 residents.<sup>272</sup> These rare Massachusetts twisters were created by the arrival of an unstable weather pattern hitting the Northeast, causing Philadelphia, New York, and Boston to

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

<sup>264</sup> *See id.*

<sup>265</sup> *See id.*

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

<sup>267</sup> *See In re Katrina Canal Breaches Litigation*, 696 F.3d 436, 436 (E.D. La. 2009) [hereinafter *Katrina I*]; Laforet, *supra* note 31.

<sup>268</sup> *See In re Katrina Canal Breaches Litigation*, 696 F.3d 436, 436 (5th Cir. 2012) [hereinafter *Katrina II*]; *Isaac Poised for Gulf Landfall Near Katrina Anniversary*, *supra* note 261.

<sup>269</sup> *See* Ben Forer & Michael James, *Massachusetts Tornadoes: At Least 3 Dead; Springfield, Westfield Hard Hit*, ABC NEWS (June 2, 2011), <http://abcnews.go.com/US/massachusetts-tornadoes-dead-springfield-westfield-hard-hit/story?id=13737522>.

<sup>270</sup> *See id.*

<sup>271</sup> *Id.*

<sup>272</sup> *Id.*

issue tornado watches.<sup>273</sup> The situation in Massachusetts was so dangerous that Governor Deval Patrick declared a statewide state of emergency, calling up 1,000 members of the National Guard.<sup>274</sup> If Massachusetts usually experiences only occasional weakened hurricanes and severe winter weather, it is unclear whether or not it would be held liable for failing to adequately prepare for twisters.<sup>275</sup>

### B. *Climate Change, Causation & Prevention*

Even if duty can be established, the “Act of God” defense still factors into the legal analysis and causes a problem in proving causation at trial.<sup>276</sup> In a tort claim, an “Act of God” defense is equivalent to an “intervening force or superseding cause” that breaks the chain of causation.<sup>277</sup> Generally, this defense requires that the event in question was not foreseeable by any “reasonable human intelligence” and without the contribution of human agency in causing the damages.<sup>278</sup>

An argument can now be made that it is reasonably foreseeable that natural disasters will occur with greater frequency and force.<sup>279</sup> Global warming is a man-made phenomenon, but it is almost impossible to establish causation on an individual level with a natural disaster.<sup>280</sup> This gives rise to an inquiry into whether or not victims can sue the government for failing to regulate global warming and therefore natural disasters.<sup>281</sup> If studies can link human action with global warming and severe weather, perhaps victims could bring action against a State for not regulating global warming enough, but also against polluters for causing such dangerous disasters.<sup>282</sup> The viability of such a

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

<sup>274</sup> *See id.*

<sup>275</sup> *See id.*

<sup>276</sup> Anada, *supra* note 45, at 311; Salvadore V. Spalitta & Kevin Pennell, *The Legal Aftermath of a Category 5 Hurricane: How Katrina and Rita Will Affect the Act of God and Force Majeure Defenses in Exploration and Production Activities*, 52 ROCKY MTN. MIN. L. FOUND., 1, 4 (2006).

<sup>277</sup> Anada, *supra* note 45, at 311.

<sup>278</sup> *Id.* at 312.

<sup>279</sup> *See* Lister, *supra* note 5.

<sup>280</sup> Lister, *supra* note 5; Lubchenko, *supra* note 12; *see* *Cormer v. Nationwide Mut. Ins. Co.*, No. 1:05CV436LTDHRW, 2006 WL 1066645, \*2, \*4 (S.D. Miss. Feb. 23, 2006).

<sup>281</sup> *See Cormer*, 2006 WL 1066645 at \*2, \*4; Cohen, *supra* note 16; Lister, *supra* note 5; Lubchenko, *supra* note 12.

<sup>282</sup> *See Cormer*, 2006 WL 1066645 at \*2, \*4; Cohen, *supra* note 16; Lister, *supra* note 5; Lubchenko, *supra* note 12.



claim is doubtful and critics contend the focus instead should be on stopping global warming.<sup>283</sup>

In *Cormer v. Nationwide Mutual Insurance Company*, a group of property owners in Mississippi sued their insurers and oil companies for their part in global warming that contributed to Hurricane Katrina-related damages.<sup>284</sup> District Judge Senter expressed strong reservations about the viability of that argument, saying that:

[T]here exists a sharp difference of opinion in the scientific community concerning the causes of global warming, and I foresee daunting evidentiary problems for anyone who undertakes to prove, by a preponderance of the evidence, the degree to which global warming is caused by the emission of greenhouse gasses; the degree to which the actions of any individual oil company, any individual chemical company, or the collective action of these corporations contribute, through the emission of greenhouse gasses, to global warming; and the extent to which the emission of greenhouse gasses by these defendants, through the phenomenon of global warming, intensified or otherwise affected the weather system that produced Hurricane Katrina.<sup>285</sup>

Even if there is a causation issue, most suits would revolve around action in response to the disaster, and not that the defendant caused the disaster by his actions.<sup>286</sup>

Given the hurdles that this claim would face in a court of law, there are other legal approaches to this issue of a State's duty in the midst of worsening natural disasters.<sup>287</sup> Although the United Nations has declined to include a duty to protect from natural disasters as part of a crime against humanity, the U.N. Office of the High Commissioner for Human Rights released a report that said, in part, "irrespective of whether or not climate change effects can be construed as human rights violations, human rights obligations provide important protec-

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<sup>283</sup> See David Adam, *UN: We Have the Money and Know-How to Stop Global Warming*, GUARDIAN (Apr. 27, 2007), <http://www.guardian.co.uk/environment/2007/apr/28/climatechange.climatechangeenvironment>.

<sup>284</sup> See *Cormer*, 2006 WL 1066645 at \*1.

<sup>285</sup> *Id.* at \*4.

<sup>286</sup> See *id.* at \*2, \*4.

<sup>287</sup> Cf. *UN Conference on Environment and Development (1992)*, *supra* note 135 (outlining the duties that a state has to address development and climate issues, in particular regarding liability and compensation for victims of environmental damage).

tion to the individuals whose rights are affected by climate change.”<sup>288</sup> The report highlights the duties owed by States to protect their citizenry from threats to human rights even when they are not directly responsible for them.<sup>289</sup>

### C. Looming Legal Liability Chills the Scientific Community

In the aftermath of the Italian conviction, the global scientific community reacted in outrage, and scientists throughout Italy swiftly turned in their resignations.<sup>290</sup> Earthquake experts say the Italian court's 2009 verdict is “likely to send a chill through the global scientific community.”<sup>291</sup> Canadian earthquake expert Gail Atkinson called it “a travesty,” and added, “I think that, unfortunately, what it will result in is seismologists and other scientists being afraid to say anything at all.”<sup>292</sup> Even further, an editorial in the journal *Nature* declared that the “verdict is perverse and the sentence ludicrous.”<sup>293</sup> In fact, within days of the verdict's announcement, four top Italian disaster experts quit their jobs, saying the ruling will make it “impossible for them to perform their duties.”<sup>294</sup>

The reaction has been felt even beyond the reaches of Italy.<sup>295</sup> John Clague, a professor of earth science at Simon Fraser University, commented that, “scientists are going to be reluctant to deal with the problem, particularly government scientists . . . academics like myself, we're going to be very guarded about the words we use [to talk about seismic activity.]”<sup>296</sup> Even though Clague admits that the Italian scientists did a weak job communicating the risks of the tremors to the citizens of L'Aquila, he questions how effective a more serious warning would have been.<sup>297</sup> “What if they had said that, within a week, there might be a devastating earthquake? Would it have changed public behavior? I doubt it, because you can't predict these things with any cer-

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<sup>288</sup> *Report on Climate Change and Human Rights*, *supra* note 160, at 20.

<sup>289</sup> Knox, *supra* note 160, at 490–91; *see id.*

<sup>290</sup> *See* Mayer, *supra* note 235.

<sup>291</sup> *Id.*

<sup>292</sup> *Id.*

<sup>293</sup> Editorial, *Shock and Law: The Italian System's Contempt for Its Scientists Is Made Plain by the Guilty Verdict in L'Aquila*, NATURE (Oct. 23, 2012) <http://www.nature.com/news/shock-and-law-1.11643>.

<sup>294</sup> Mayer, *supra* note 235.

<sup>295</sup> *Id.*

<sup>296</sup> *Id.*

<sup>297</sup> *Id.*

tainty at all . . . that would have just put people in a more anxious state.”<sup>298</sup>

In fact, Italian law recognizes the crime of “unnecessarily causing alarm.”<sup>299</sup> In the weeks before the earthquake, Giampaolo Giuliani, a scientific technician working near L’Aquila, predicted an earthquake based on data he collected that pinpointed another town in Abruzzo.<sup>300</sup> He warned the mayor of Sulmona, a city situated only 50km from L’Aquila, and the mayor took the alert seriously enough to send vans equipped with loudspeakers around the town to warn citizens.<sup>301</sup> This technique quickly created panic and the police issued Giuliani a gagging injunction.<sup>302</sup> Given this incident, there seems to exist a very thin line then between being gagged and forced to refrain from warning because it would cause alarm, and not giving adequate warning.<sup>303</sup>

Scientists across the globe feel that Italian courts prosecuted these officials for simply telling the truth and the court overlooked the reality that science, by nature, involves uncertainty.<sup>304</sup> It is impossible to fully protect people from natural disasters, no matter the warnings or the preparation, even if “we stay locked in our homes.”<sup>305</sup> Instead, it is just “the job of scientists to help the public and governments assess risks as accurately as possible so that they can take appropriate actions.”<sup>306</sup>

#### D. *An Alternative Approach to Natural Disaster Management and Survivor Grievances*

Countries across the world can build upon already established out-of-court means to address victim grievances.<sup>307</sup> First, the international community should directly foster a dialogue to define a state’s duty in the wake of worsening natural disasters, and second, they should in-

<sup>298</sup> *Id.*

<sup>299</sup> John Dollar, *The Man Who Predicted an Earthquake*, GUARDIAN (Apr. 4, 2010), <http://www.guardian.co.uk/world/2010/apr/05/laquila-earthquake-prediction-giampaolo-giuliani>; see Mayer, *supra* note 235.

<sup>300</sup> Dollar, *supra* note 299.

<sup>301</sup> *Id.*

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

<sup>303</sup> *See id.*

<sup>304</sup> Krauss, *supra* note 95.

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

<sup>306</sup> *See id.*

<sup>307</sup> *See UN Conference on Environment and Development (1992)*, *supra* note 135; *Deadline Arrives for 9/11 Victim Compensation Fund*, N.Y. 1 NEWS, (Oct. 3, 2013 09:48 AM), available at [http://manhattan.ny1.com/content/news/world\\_trade\\_center/189824/deadline-arrives-for-9-11-victim-compensation-fund](http://manhattan.ny1.com/content/news/world_trade_center/189824/deadline-arrives-for-9-11-victim-compensation-fund).

crease and build upon an already established practice of victim relief compensation funds.<sup>308</sup>

The United Nations took the warnings of the 1990 report concerning the status of climate change published by the IPCC, and responded by organizing the “Earth Summit” in Rio de Janeiro in 1992.<sup>309</sup> The “Earth Summit” sought to help governments come to grips with this problem, and make a sustainable plan for addressing it.<sup>310</sup> The “wide-ranging blueprint for action” can and should be used as a model for a domestic and international meeting on the issue of natural disaster preparation, protection and mitigation.<sup>311</sup> Even if the result is a non-binding agreement similar to that of Agenda 21, the international community will take a stand on whether or not a nation has a duty to protect, carve out a means to hold a nation responsible, create avenues to legal action, and create a sustainable plan to deal with the future of impending natural disasters.<sup>312</sup>

In the aftermath of disasters, many States across the globe set up victim compensation funds to help citizens rebuild.<sup>313</sup> Similar accounts and administrative processes have been established in the aftermath of September 11<sup>th</sup> 2001 and for crime victims.<sup>314</sup> There have even been donation-based funds successfully set up in the aftermath of the Boston Marathon Bombings.<sup>315</sup> These funds often include an administrative opportunity to be heard and file a grievance without bringing suits in a court of law, which immunity often bars donees from doing.<sup>316</sup> Whether a government puts money aside for such claims or, on the

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<sup>308</sup> See *UN Conference on Environment and Development*, *supra* note 135; *Deadline Arrives for 9/11 Victim Compensation Fund*, *supra* note 307.

<sup>309</sup> See *Massachusetts v. Envtl. Prot. Agency*, 549 U.S. 497, 508–09 (2007); *IPCC Scientific Assessment*, *supra* note 132.

<sup>310</sup> See *UN Conference on Environment and Development*, *supra* note 135.

<sup>311</sup> See *id.*

<sup>312</sup> See *id.*

<sup>313</sup> See FEDERAL EMERGENCY MANAGEMENT AGENCY, <http://www.fema.gov/you-apply> (explaining disaster assistance programs and victim compensation opportunities).

<sup>314</sup> See Martine Powers, *State Victim Fund May Also Provide Relief to Boston Marathon Victims*, BOS. GLOBE (May 21, 2013), <http://www.bostonglobe.com/metro/2013/05/20/state-victim-fund-may-also-provide-relief-boston-marathon-victims/5Ywk4mKqJH9IV7HtjgPArK/story.html>; FEDERAL EMERGENCY MANAGEMENT AGENCY, <http://www.fema.gov/apply-assistance>.

<sup>315</sup> THE ONE FUND, <https://secure.onefundboston.org/>.

<sup>316</sup> See *Freeman v. United States*, 556 F.3d 326, 328 (5th Cir. 2009); *St. Tammany Parish v. Federal Emergency Mgmt. Agency*, 556 F.3d 307, 307 (5th Cir. 2009).

other hand, is found liable and pays the judgment through taxpayer money—the money ultimately comes from the same place.<sup>317</sup>

Compensating victims without the need for court proceedings is aligned with the policy behind sovereign immunity, the idea that it is not in the best interest of a country to open itself up to an endless flow of legal suits and precedent.<sup>318</sup> Whatever the best solution is, it is undoubtedly clear that natural disasters are no longer a rare occurrence and it is in the best interest of states to define their duty and create a due process standard for victim grievances.<sup>319</sup>

### CONCLUSION

Natural disaster law has rapidly moved to the forefront of national consciousness as people around the world face disaster after disaster of historic proportion. Citizens undoubtedly feel that their government should protect them by preparing, warning and mitigating natural disaster damages when they have taken their toll. Even so, there is no clearly defined legal duty established under domestic or international law. Citizens of the U.S. Gulf Region after Hurricane Katrina and the Office of the Prosecutor in L'Aquila Italy have set a significant precedent by bringing these legal actions to fruition. Legal theorists and humanitarian groups have spoken out against the injustices following the Cyclone in Myanmar with less success. Nevertheless, even given this precedent, natural disaster litigation faces practical and policy concerns. There is a balance between holding nations responsible for failing to prepare, warn of, and mitigate natural disaster damages. Unprotected citizens should have an avenue for legal suit. On the other hand, a nation might not be able to keep up with worsening natural disasters and the flood of litigation that will follow any disaster. Perhaps the better solution is to create a global dialogue and summit on the expectations, legal remedies and a way to enhance victim compensation funds to remedy claims out of a courtroom.

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<sup>317</sup> See *Katrina II*, 696 F.3d at 436; FEDERAL EMERGENCY MANAGEMENT AGENCY, <http://www.fema.gov/apply-assistance>.

<sup>318</sup> See Chemerinsky, *supra* note 115 at 1201–02; Jorissen, *supra* note 170, at 590.

<sup>319</sup> See Flynn, *supra* note 5; Lubchenco, *supra* note 12; see also WORLD DISASTERS REPORT, *supra* note 11, at 11.