

Winter 2018

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### Recommended Citation

Ian Andrew Barber, *U.N. Security Council Resolution 1540: An Exemplary Model for a Framework to Safeguard Dangerous Dams Against Sabotage by Nonstate Actors*, 41 HASTINGS INT'L & COMP.L. Rev. 99 (2018).

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# **U.N. Security Council Resolution 1540: An Exemplary Model for a Framework to Safeguard Dangerous Dams Against Sabotage by Nonstate Actors**

BY IAN ANDREW BARBER

## **Abstract**

*The purpose of this research is to explore how an international framework could be developed in order to safeguard large dams against sabotage by nonstate actors, such as terrorist organizations or hostile civilians. The necessity of an international security agreement to manage dams as a global security threat will be clearly substantiated via an analysis of three determinants: the possible magnitude of dam failure, the inadequacies of international law to regulate asymmetric warfare, and the evolving threat of dam sabotage in the developing world. Subsequently, various legal components and regulatory mechanisms from an existing international agreement will be considered with regard to their adaptation in a hypothetical security resolution. Specifically, I will argue that the United Nations Security Council Resolution 1540 serves as an exemplary model for an international security agreement to safeguard potentially dangerous dams from sabotage. This assertion will be conveyed through a detailed analysis of the resolution's background, design, binding nature, role in existing legal regime, political buy-in, state-level implementation, and compliance scheme. Furthermore, certain limitations and criticisms of this argument will be intermittently addressed as they pertain to the aforementioned elements and theoretical international agreement on dam security.*

## Introduction: The Necessity of an International Security Agreement

### Magnitude of Dam Failure

Dam failure should be viewed as a global security risk on account of the tremendous energy and water stored behind these structures. In the event of dam failure, rapid and unforeseeable flooding can occur downstream, resulting in a significant loss of human life, environmental destruction, and long-lasting economic disruption.<sup>1</sup> In the summer of 1975, a historic amount of rain fell upon the Henan province in China. The unprecedented rainfall happened to occur after the Chinese government engaged in years of rapid dam development during the social and economic campaign known as Great Leap Forward. The storm caused such intense flooding that the Banqiao Reservoir Dam, located in the Henan province, eventually collapsed.<sup>2</sup> It is estimated that the crumbling of this dam created a moving wall of water that was nearly 6 meters tall and 12 kilometer long.<sup>3</sup> This dam failure ultimately killed over 170,000 people.<sup>4</sup> In comparison, the United States Department of Energy estimates that the casualties suffered from the atomic bombing of Hiroshima was around 100,000 by the end of 1945.<sup>5</sup> Therefore, one can easily deduce that dam failure is a high level security risk where the magnitude of devastation rivals commonly defined weapons of mass destruction. For this reason, military powers have historically targeted dams as a means to destroy large population centers during times of armed conflict.<sup>6</sup>

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1. The Guadalupe-Blanco River Authority, *Hazard Mitigation Plan Section 14: Dam Failure* 1, 1-2, <http://www.gbra.org/documents/hazardmitigation/update/section14-damfailure.pdf> (last visited Sept. 29, 2017).

2. Eric Fish, *The Forgotten Legacy of the Banqiao Dam Collapse*, INTERNATIONAL RIVERS (Feb. 8, 2013), <https://www.internationalrivers.org/resources/the-forgotten-legacy-of-the-banqiao-dam-collapse-7821>.

3. Yi Si, *The World's Most Catastrophic Dam Failures: The August 1975 Collapse of the Banqiao and Shimantan Dams* in *THE RIVER DRAGON HAS COME!* 25, 26 (M.E. Sharpe, Ming Yo trans., 1998).

4. Eric Fish, *supra* note 2.

5. U.S. Dept. of Energy, *The Atomic Bombing of Hiroshima*, <https://www.osti.gov/opennet/manhattan-project-history/Events/1945/hiroshima.htm>.

6. Marcus DuBois King, *The Weaponization of Water in Syria and Iraq*, VOL. 40 WASH. QUART. REV. 53, 155–56 (2016).

## Inadequacies of International Law

Since the Banqiao Dam catastrophe, dams have been defined in Article 56 of Protocol I amendment protocol to the Geneva Conventions as “installations containing dangerous forces.”<sup>7</sup> Article 56 of Protocol I pertains to the protection of works and installations containing dangerous forces in international armed conflicts. It states that dams “shall not be made the object of attack, even where these objects are military objectives, if such attack may cause the release of dangerous forces and consequence severe losses among the civilian population.”<sup>8</sup> This prohibition is similarly stated in Article 15 of Protocol II, which regulates noninternational armed conflicts.<sup>9</sup> An appeal by the International Committee of the Red Cross in 1997 urged nations who had not yet ratified the Additional Protocols to quickly do so given their universal scope as customary international law, regardless of whether a state actually ratified the instruments.<sup>10</sup> These Additional Protocols are complemented by the 1976 Convention on the Prohibition of Military or any Hostile Use of Environmental Modification Techniques. The convention states that contracting parties may not engage in “any hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to another state party.”<sup>11</sup>

Yet, the legitimacy of Article 56 of Protocol I as customary humanitarian international law is directly challenged by the world’s most capable militaries. For instance, the United States have since refused to ratify Protocol I, which critics argue has hindered the widespread application of these international laws and norms.<sup>12</sup> American opposition to Protocol I is perhaps unsurprising when

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7. International Committee of the Red Cross, *Protocol Additional to the Geneva Conventions*, <https://ihl-databases.icrc.org/applic/ihl/ihl.nsf/Article.xsp?action=openDocument&documentId=3376730ECD9DF7B1C12563CD0051DD37> (last visited Sept. 29, 2017).

8. *Id.*

9. *Id.*

10. Cornelio Sommaruga, *International Review of the Red Cross*, No. 320 (Oct. 31, 1997), <https://www.icrc.org/eng/resources/documents/article/other/57jnu.htm>.

11. International Committee of the Red Cross, *Convention on the Prohibition of Military or any Hostile Use of Environmental Modification Techniques*, <https://ihl-databases.icrc.org/ihl/INTRO/460> (Dec. 10, 1979).

12. Jason Gehrig & Mark M. Rogers, *Water and Conflict: Incorporating Peacebuilding into Water Development* 51–53 (Catholic Relief Services, 2009), <https://www.crs.org/sites/default/files/tools-research/water-and-conflict.pdf>.

considering that the United States has historically targeted dams and other forms of infrastructure during the Korean and Vietnam Wars.<sup>13</sup> While one might rush to define such action as a flagrant disregard for international law, these military tactics were undertaken before Protocol I came into existence.<sup>14</sup> It should also be taken into account that world powers who often engage in international armed conflicts have more of an incentive to reject codified limitations on their abilities given the increasingly complex nature of war. For example, the United States concluded that Protocol I should not be ratified due to specific concerns about it limiting the abilities of the U.S. military to combat terrorism, and not because it objected to the overarching components of the protocol.<sup>15</sup> Regardless, according to Jason Gehrig and Mark M. Rogers in *Water and Conflict*, Protocol I still carries “considerable moral weight during war, and serves as a means for demanding more humane behavior in times of armed conflict between states.”<sup>16</sup>

The moral weight of this protocol as international law may be supported through an investigation of the controversy surrounding Ethiopia’s Grand Renaissance Dam. The construction of this dam, the largest hydroelectric dam in Africa, has sparked tension between Ethiopia and Egypt.<sup>17</sup> The main points of contention surrounding this hydroelectric dam are Egyptian concerns that the structure will reduce their historically large portion of the Nile’s flow and cause damage to the Egyptian economy.<sup>18</sup> A number of Egyptian politicians have even called for covert military action to sabotage the dam. Despite failed efforts by basin countries to include Egypt in joint management of the Nile, as prescribed by

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13. WARD THOMAS, *THE ETHICS OF DESTRUCTION: NORMS AND FORCE IN INTERNATIONAL RELATIONS* 152–53 (Cornell University Press, 1st ed. 2001).

14. *Id.*

15. The White House, *A Message from the President of the United States regarding Protocol II Additional to the 1949 Geneva Conventions, and Relating to the Protection of Victims of Non-international Armed Conflicts*, Jan. 29, 1987, <https://casebook.icrc.org/case-study/united-states-president-rejects-protocol-i>.

16. Jason Gehrig & Mark M. Rogers, *supra* note 11, at 53.

17. Patrick Kingsley, *Nile Dam Study Fails to Stem the Tide of Egyptian Indignation Towards Ethiopia*, *THE GUARDIAN*, Apr. 16, 2014, <https://www.theguardian.com/global-development/poverty-matters/2014/apr/16/nile-dam-study-egyptian-indignation-ethiopia>.

18. Scott McKenzie, *International Water Law – Preventing Conflict on the Nile*, *OPINIO JURIS*, July 16, 2013, <http://opiniojuris.org/2013/07/16/emerging-voices-international-water-law-preventing-conflict-on-the-nile/>.

Article 24 of the 1997 U.N. Watercourses Convention,<sup>19</sup> no sabotage attempts have been made to date.<sup>20</sup> While the absence of military action or clandestine sabotage is likely due to a number of factors, this conflict nonetheless represents state adherence to international humanitarian law and specifically to Article 56 of Protocol I.

Although adherence to international humanitarian law has been widely observed by nation states, non-state actors such as ISIS, Boko Haram, and Al-Qaida blatantly disregard the law of armed conflict and international humanitarian law by committing mass executions and widespread attacks on civilians.<sup>21</sup> The United Nations Security Council has increasingly called upon armed nonstate actors to begin respecting international law, but this has not translated into a significant change in behavior.<sup>22</sup> In fact, many argue that the Geneva Conventions and other sources of the law of armed conflict and international humanitarian law do not properly manage asymmetric conflict involving states and nonstate actors of varying capabilities and objectives.<sup>23</sup> This concept is furthered by the International Committee of the Red Cross, who have explicitly acknowledged that international humanitarian law only regulates armed conflict between “parties.” Parties include states, national liberation movements, or other armed groups that have a certain organized structure.<sup>24</sup> The Special Court for Sierra Leone has reaffirmed this distinction in 2004, when it held that nonstate actors must abide by international humanitarian law if the group is organized and fighting has reached a certain level of intensity.<sup>25</sup> Still, much of the violence now

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19. G.A. Res. 51/229, U.N. Convention on the Law of the Nonnavigational Uses of International Watercourses (May 21, 1997).

20. Patrick Kingsley, *supra* note 16.

21. Lyal S. Sunga, *Can International law Meet the Challenges of Today's Lawless Conflicts*, THE GUARDIAN, Nov. 15, 2015, <https://www.theguardian.com/global-development-professionals-network/2015/nov/14/international-law-yemen-syria-isis-conflict>.

22. STUART CASEY-MASLEN, *WEAPONS UNDER INTERNATIONAL HUMAN RIGHTS LAW* 171 (Cambridge University Press, 2004).

23. Toni Pfanner, *Asymmetrical warfare from the perspective of humanitarian law humanitarian action*, VOL. 87, NO. 857 INT'L REV. RED CROSS 158, 160 (March 2005), [https://www.icrc.org/eng/assets/files/other/irrc\\_857\\_pfanner.pdf](https://www.icrc.org/eng/assets/files/other/irrc_857_pfanner.pdf).

24. International Committee of the Red Cross, *International humanitarian law and terrorism: questions and answers* (Jan. 1, 2011) <https://www.icrc.org/eng/resources/documents/faq/terrorism-faq-050504.htm#Dosomeaspectsofthefightagainstterrorismamounttoanationalarmedconflict>.

25. STUART CASEY-MASLEN, *supra* note 21, at 172.

surrounding domestic and international armed conflicts throughout the world involve isolated attacks, either by loosely organized groups or individuals that may fall outside these definitions.<sup>26</sup> In essence, international law has proven to be a rather inadequate means of ensuring that nonstate actors abide by international norms and humanitarian law. This is largely because modern warfare has evolved to a point where the existing international framework does not clearly define which emerging entities are subject to international law. There is also a clear indication that certain actors may not abide by international humanitarian law and the law of armed conflict regardless of clear and codified obligations under international law.

### **Evolving Threat of Dam Sabotage in the Developing World**

Rapid urbanization, population growth, and environmental concerns like climate change have increased demands by governments and international agencies for hydroelectric power in the developing world.<sup>27</sup> As documented by the International Energy Agency, there has been a notable resurgence in large dam construction within the past few years as developing nations devote themselves towards sustainable development.<sup>28</sup> This trend may be observed in areas such as Central America, where officials have increased hydroelectric dam construction because of the U.N.'s Framework Convention on Climate Change Kyoto Protocol Clean Development Mechanism (CDM).<sup>29</sup> This mechanism, as defined in Article 12 of the Kyoto Protocol, enables developing nations to construct emission reduction projects, like hydroelectric dams, and then sell carbon credits to developed nations with emission reduction targets.<sup>30</sup> On the other hand, there is a growing consensus

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26. International Committee of the Red Cross, *supra* note 23.

27. George Ledec & Juan D. Quintero, *Good Dams and Bad Dams, Good Dams and Bad Dams: Environmental Criteria for Site Selection of Hydroelectric Projects*, The World Bank Latin America and Caribbean Region Sustainable Development Working Paper 16 (November 2003), [http://siteresources.worldbank.org/LACEXT/Resources/258553-1123250606139/Good\\_and\\_Bad\\_Dams\\_WP16.pdf](http://siteresources.worldbank.org/LACEXT/Resources/258553-1123250606139/Good_and_Bad_Dams_WP16.pdf).

28. International Energy Agency (IEA), *World Energy Outlook 2012*, 220–26 (2012), [http://www.iea.org/publications/freepublications/publication/WEO2012\\_free.pdf](http://www.iea.org/publications/freepublications/publication/WEO2012_free.pdf).

29. Dr. Kate Brannum, *Human Security and the Threat of Hydroelectric Dams*, In *Homeland Security* 1, 11 (Apr. 13, 2015) <http://inhomelandsecurity.com/human-security-and-the-threat-of-hydroelectric-dams/>.

30. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec.

that the construction of large dams is not compatible with sustainable development due to negative social and environmental impacts.<sup>31</sup> Regardless of these contrasting perspectives, I argue that this trend towards large dam construction is particularly concerning because many developing nations have neither the proper legal mechanisms nor capabilities to ensure the security of these structures.

For example, in August 2014 an unrecognized state and terrorist group, known as ISIS, was able to capture the 3.2-kilometer-long Mosul Dam in Iraq.<sup>32</sup> One could contend that ISIS would be forbidden from attacking the Mosul Dam since the group's extensive hierarchical structure and heightened level of conflict qualifies them as a "party" under the Geneva Conventions. Be that as it may, ISIS appears to take a drastically different approach to engaging in armed conflict when compared to previously active entities that would also be afforded the protections and obligations of "parties" under the Geneva Conventions.<sup>33</sup> Unlike the Front de Libération du Québec (FLQ) and Basque separatists (ETA) who had some regard and adherence to codified international customary law, ISIS and similar groups remain opposed to previously recognized norms of international humanitarian law.<sup>34</sup> This dam takeover caused officials in the United States to fear that the Islamic State militants might sabotage the structure and release what would easily be defined as "dangerous forces" under Protocol I or II of the Geneva Conventions.<sup>35</sup> American airstrikes were called in to combat this threat and a counter attack led by Kurdish and Iraqi forces was successful in retaking the dam.<sup>36</sup> Without this quickly orchestrated response, the projected flood wave from sabotage and destruction of the Mosul Dam would have released a nearly 70-foot wall of water onto the city of Mosul, and caused extensive flooding in Baghdad hundreds

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10, 1997, FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 Feb. 16, 2005.

31. David Biello, *The Dam Building Boom: Right Path to Clean Energy?* (Feb. 23, 2009), [http://e360.yale.edu/feature/the\\_dam\\_building\\_boom\\_right\\_path\\_to\\_clean\\_energy/2119/](http://e360.yale.edu/feature/the_dam_building_boom_right_path_to_clean_energy/2119/).

32. Umberto Baachi, *Mosul Dam: Italian company signs contract to repair Iraqi dam at risk of collapse on ISIS frontline* THE INTERNATIONAL BUSINESS TIMES, March 3, 2016, <http://www.ibtimes.co.uk/mosul-dam-italian-company-signs-contract-repair-iraqi-dam-risk-collapse-isis-frontline-1547157>.

33. Lyal S. Sunga, *supra* note 20.

34. *Id.*

35. International Committee of the Red Cross, *supra* note 7.

36. Felicia Schwartz, Dion Nissenbaum & Nour Malas, *U.S. Airstrikes Aim at Islamic State hold on Iraq Dam*, WALL ST. J., Aug. 16, 2014, <http://www.wsj.com/articles/u-s-air-craft-conducting-strikes-against-militants-at-mosul-dam-1408200303>.



of miles away.<sup>37</sup> Some have estimated that this massive wave could kill as many as a million and a half people.<sup>38</sup> The regional and global ramifications of such an incident would be unprecedented.

The Mosul Dam incident is not unique in our day and age. According to a 2012 report by the United States Department of Homeland Security, separatist, communist, and Islamist insurgent groups have attempted over 25 attacks on dams between 2001 and 2011.<sup>39</sup> Not surprisingly, the majority of these attacks have taken place in the developing world.<sup>40</sup> While these attacks were successfully thwarted or failed to bring about mass destruction, certain nations do not possess the resources or capabilities to ensure dam security. The Mosul Dam takeover demonstrates this assessment, as the Iraqi government was clearly incapable of ensuring state control over the Mosul Dam from an encroaching terrorist organization.<sup>41</sup> The global security threat posed by dam sabotage will only become more profound as developing nations continue to build large hydroelectric dams. Additionally, countries such as the United States cannot be reasonably expected to halt such catastrophes on a global level. The magnitude of destruction that comes with dam sabotage is too great to be safeguarded by any one nation.

In light of these considerations, it is evident that an international framework is required to effectively prevent non-state actors from sabotaging large dams and using them as weapons of mass destruction. Throughout the rest of this paper, I will present an argument as to why the United Nations Security Council Resolution 1540 serves as an ideal model for such a hypothetical security agreement. This thesis will be conclusively supported through a comprehensive examination of the background, design,

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37. The New York Times, *Iraq's Biggest Dam Could Collapse at Any Time, Killing Thousands*, N.Y. TIMES, Mar. 1, 2016, [http://www.nytimes.com/2016/03/02/world/middle-east/iraqs-biggest-dam-could-collapse-at-any-time-killing-thousands.html?\\_r=0](http://www.nytimes.com/2016/03/02/world/middle-east/iraqs-biggest-dam-could-collapse-at-any-time-killing-thousands.html?_r=0).

38. Dexter Filkins, *A Bigger Problem Than ISIS?*, THE NEW YORKER, Jan. 2, 2017, <https://www.newyorker.com/magazine/2017/01/02/a-bigger-problem-than-isis>.

39. Department of Homeland Security, *Worldwide Attacks Against Dams* 9 (2012), <http://www.cowarn.org/uploads/news/Worldwide%20Attacks%20against%20Dams%20-%202012.pdf>.

40. *Id.* at 10–11.

41. Jeremy Bender, *Isis Has Seized Iraq's Largest Dam, And What Happens Next is Critical*, BUS. INSIDER, Aug 7, 2014, <http://www.businessinsider.com/isis-has-seized-the-mosul-dam-2014-8>.

binding nature, role in existing legal regime, political buy-in, implementation, and compliance scheme of Resolution 1540. In addition, certain limitations and criticisms, including perceived problems of implementation and compliance, will be addressed to provide a more extensive understanding of the resolution and its role as a model agreement.

## **United Nations Security Council Resolution 1540: An Exemplary Model**

### **Background and Design**

The United Nations Security Council Resolution 1540 was unanimously adopted in 2004 by the United Nations Security Council with the purpose of preventing nonstate actors from acquiring and utilizing weapons of mass destruction. The weapons of mass destruction referred to in this agreement include “nuclear, chemical, or biological weapons and their delivery systems.”<sup>42</sup> Delivery means are defined under this resolution as “missiles, rockets and other unmanned systems capable of delivering” the aforementioned types of weapons.<sup>43</sup> The U.N. Security Council quickly passed Resolution 1540 as a reactionary measure to the Abdul Qadeer Khan nuclear proliferation network in 2004, and in light of the September 11 attacks in 2001.<sup>44</sup> Through the adoption of this resolution, the United Nations Security Council created new legal measures to solve a growing international security threat. Whereas previous agreements and conventions existed to halt state actors from acquiring and utilizing weapons of mass destruction, no comprehensive resolution had been adopted with regard to non-state actors, like terrorist organizations.<sup>45</sup> Neither unconventional weapons of mass destruction nor their means of delivery were expressly included in the resolution.

The overall design of Resolution 1540 lends support to the idea

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42. S.C. Res. 1540 (April 28, 2004).

43. *Id.*

44. Igor Khripunov, *A Work in Progress: UN Security Resolution 1540 After 10 Years*, 44 *ARMS CONTROL TODAY*, no. 4 (2014), [https://www.armscontrol.org/act/2014\\_05/A-Work-in-Progress-UN-Security-Resolution-1540-After-10-Years](https://www.armscontrol.org/act/2014_05/A-Work-in-Progress-UN-Security-Resolution-1540-After-10-Years).

45. Department of Homeland Security, *supra* note 39.

that this resolution is exemplary in nature and thus a proper model for emulation in other collective security agreements. As previously distinguished, one can see that the framers of this resolution recognized a particular threat to world peace, and went about crafting an international agreement aimed at neutralizing this global security hazard. The agreement design of Resolution 1540 is narrowly focused in a way that it tackles a specific problem – the proliferation and utilization of weapons of mass destruction by nonstate actors.<sup>46</sup> The specificity of Resolution 1540 is a key element of its success, as international agreements that are constructed to be overly broad may not have a significant impact nor bring about a change in state behavior. For instance, the narrow focus of the Montreal Protocol has been deemed as an essential component to its success.<sup>47</sup> By focusing exclusively on eliminating certain substances that depleted the ozone layer, the protocol was successful in phasing out CFCs. In more recent times, scientists have argued for and agreed upon an expansion in the scope of the Montreal Protocol in 2016 in order to dramatically reduce the effects of climate change.<sup>48</sup> However, this expansion may prove to be less successful when compared to the rapid and unquestionable efficacy of the original agreement. When considering the overall design of a hypothetical security agreement to safeguard dams, the inclusion of additional or unrelated dangerous structures might be met with contention by international policy makers who fear that expanding the scope might detract from its original objective.

Furthermore, as argued by Leslie Johns in *Depth Versus Rigidity in the Design of International Trade Agreements*, “depth and rigidity affect the stability of the cooperative regime – the ability of the regime to endure.”<sup>49</sup> Despite referring to international trade agreements, this statement is analogous when applied to other types of international agreements. International financial accords, including specific G20

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46. S.C. Res. 1540, *supra* note 42.

47. Emily O'Brien & Richard Gowan, *What Makes International Agreements Work: Defining Factors for Success* 3, 12 (Center for International Cooperation 2012), <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/7839.pdf>.

48. G. Velders, A. Ravishankara, M. Miller, M. Molina, J. Alcamo, J. Daniel, D. Fahey, S. Montzka, S. Reimann, *Preserving Montreal Protocol Climate Benefits by Limiting HFCs*, SCIENCE VOL. 335 (Feb. 24, 2012), <http://www.igsd.org/documents/Science-2012-Velders-922-3.pdf>.

49. Leslie Johns, *Depth Versus Rigidity in the Design of International Trade Agreements*, Vol. 26 (3) J. THEO. POL. 468, 469, (2014), <http://www.lesliejohns.me/DvR.pdf>.

decisions during times of financial crisis, have largely been successful because of their narrow focus and deep obligations; whereas certain human rights treaties crafted by the United Nations have been seen as shallow and problematic.<sup>50</sup> American law professor Eric Posner has argued that agreements such as the Convention Against Torture have banned the practice of torture on paper but that “Governments in some 150 countries (out of about 193 U.N. members) use torture, not much different from when the treaty went into force in 1987.”<sup>51</sup> Similar claims may be made concerning the International Covenant on Civil and Political Rights or the Convention on the Elimination of All Forms of Discrimination Against Women.<sup>52</sup> If one were to consider the design and scope of a hypothetical security resolution on safeguarding dangerous dams from non-state actors, Resolution 1540 would serve as an excellent model. As demonstrated, the resolution was crafted in a manner that avoids the ineffectiveness seen in other frameworks. It also mirrors the narrow focus and depth of accords that have proven to be successful, stable, and effective in changing behavior.

### **Binding Nature**

Daniel Bodansky in his work *Legally Binding Versus Non-Legally Binding Instruments*, indicates how “formulating an agreement in legally binding terms signals stronger commitment . . . and it can serve as a stronger basis for domestic and international mobilization.”<sup>53</sup> Accordingly, the binding nature of Resolution 1540 is an essential component to the resolutions’ success, and reinforces its role as a model international agreement for a hypothetical collective security resolution on dams. Resolution 1540 was adopted by the United Nations Security Council under Chapter VII of the United Nations Charter. In adopting the resolution in this manner, it imposes binding obligations on all member states,<sup>54</sup> requiring them to take a number of steps in preventing the proliferation of weapons of mass

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50. Emily O’Brien & Richard Gowan, *supra* note 47.

51. Kenneth Roth & Eric Posner, Dec. 28, 2014, *Have Human Rights Treaties Failed?*, N.Y. TIMES, DEC. 28, 2014, <http://www.nytimes.com/roomfordebate/2014/12/28/have-human-rights-treaties-failed>.

52. *Id.*

53. Daniel Bodansky, *Legally Binding Versus Non-legally Binding Instruments in TOWARDS A WORKABLE AND EFFECTIVE CLIMATE REGIME* 155, 155–56 (Scott Barrett, Carlo Carraro, & Jaime de Melo eds., 2015).

54. U.N. Charter art. 103.

destruction.<sup>55</sup> For instance, OP1 of the resolution dictates that states “shall refrain from providing any form of support to non-state actors that attempt to develop, acquire, manufacture, possess, transport, transfer, or use nuclear, chemical, or biological weapons and their means of delivery.”<sup>56</sup> OP2 then articulate how states must adopt national legislation to prohibit the aforementioned regulations, and OP3 requires the enforcement of domestic controls, like border control, to prevent proliferation.<sup>57</sup>

These binding commitments were crafted as a means of fostering legitimate international cooperation, but not all binding agreements bring about serious collaboration. The Clean Development Mechanism of the Kyoto Protocol was created for developed nations to satisfy their binding national emissions targets.<sup>58</sup> In spite of these binding commitments for developed nations, developing countries were not included in establishing binding commitments, contributing to the ineffectiveness of the Kyoto Protocol.<sup>59</sup> This suggests that the binding nature of Resolution 1540 is not necessarily exemplary. Instead, it is the universality of the resolutions’ binding nature that establishes it as a model for a hypothetical security agreement.

In addition, Resolution 1540 does not indicate how states should go about meeting the obligations of the resolution, but instead only addresses what the states are required to do.<sup>60</sup> It is common to think of binding agreements as precise in nature with clearly indicated means for satisfying enumerated obligations. Yet, legal instruments like Resolution 1540 can be binding and still provide states flexibility in achieving goals, whereas nonbinding accords can be extremely precise in how a state should satisfy obligations.<sup>61</sup> This component of the resolution is particularly important for a hypothetical resolution on

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55. Dr. Berhanykun Andemicael, *UNSC Resolution 1540 and Strengthening Nuclear Security* 3 (Jan. 28, 2010), <http://www.un.org/en/sc/1540/transparency-and-outreach/outreach-events/pdf/expert-presentation-2010-2-austria.pdf>.

56. S.C. Res. 1540, *supra* note 42.

57. *Id.*

58. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Dec. 10, 1997, FCCC/CP/1997/7/Add.1, 37 I.L.M. 22 Feb. 16, 2005.

59. Emily O’Brien & Richard Gowan, *supra* note 47.

60. Hanne Veel, *A Brief History of the United Nations Security Council Resolution 1540 in light of the 2016 Comprehensive Review*, Background Paper No. 18/2016, INT. LAW AND POL. INST. (June 13, 2016), <http://nwp.ilpi.org/?p=5264>.

61. Daniel Bodanksy, *Legally Binding Versus Non-legally Binding Instruments in TOWARDS A WORKABLE AND EFFECTIVE CLIMATE REGIME* 155, 159-160 (Scott Barrett, Carlo Carraro, & Jaime de Melo eds., 2015).

dam security as it attempts to offset sovereignty concerns. It manages to do so while simultaneously requiring sovereign states to change their behavior through the enactment of specific domestic legislation.<sup>62</sup> This is evidenced by Laos, who despite voicing some concerns over sovereignty, still supported the resolution.<sup>63</sup> Furthermore, countries like the United States decided to cosponsor the resolution.<sup>64</sup> One might find this especially odd since the United States has refused to ratify a number of treaties over sovereignty concerns.<sup>65</sup> For example, the Rome Statute of the International Criminal Court was signed by the United States in 2000. However, the United States would later write to the U.N. Secretary in 2002 indicating that they did not want to become a party to the treaty, and consequently relinquished themselves of any legal obligations.<sup>66</sup>

Fortunately for the international community, state actors have historically been known to cooperate in order to confront problems that would typically require a joint effort.<sup>67</sup> The international security threat presented by the proliferation of weapons of mass destruction by nonstate actors is certainly a threat requiring joint effort and binding obligations. Along the same lines, dam sabotage by non-state actors requires cooperation and specific obligations since the consequences of such sabotage have global ramifications. Consequently, the universal binding nature of Resolution 1540 supports its role as an exemplary model for the proposed hypothetical security resolution.

### Role in Existing Legal Regime

As argued by Emily O'Brien and Richard Gowan in *What Makes International Agreements Work: Defining Factors for Success*, a

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62. S.C. Res. 1540, *supra* note 42.

63. U.N. District General, *Note Verbale from Permanent Mission of the Lao People's Democratic Republic to the United Nations addressed to the Chairman of the Committee*, UN document S/AC.44/2004/(02)/117 (May 4 2005).

64. Veel, *supra* note 60.

65. JOHN F. MURPHY, *THE UNITED STATES AND THE RULE OF LAW IN INTERNATIONAL AFFAIRS* 349–57 (Cambridge University Press, 2004).

66. Letter from John R. Bolton, Press Statement, to U.N. Secretary General Kofi Annan (May 6, 2002) (on file with U.S. Department of State), <https://2001-2009.state.gov/r/pa/prs/ps/2002/9968.htm>.

67. JAN KLABBERS, *AN INTRODUCTION TO INTERNATIONAL INSTITUTIONAL LAW* 30 (Cambridge University Press, 2009).

successful international agreement should “fit well with existing international regimes and institutions.” Resolution 1540 is an ideal model for a hypothetical security resolution to safeguard large dams from sabotage by nonstate actors because it satisfies these terms, especially with regard to its role in the existing nonproliferation regime. Resolution 1540 reinforces existing international law, as opposed to replacing it. The resolution compliments treaties such as the Treaty on the Non-Proliferation of Nuclear Weapons and Chemical Weapons Convention, as these were deemed to be integral components to the preexisting nonproliferation regime.<sup>68</sup> Resolution 1540 not only compliments the existing regime, but also explicitly states that it does not alter or conflict with obligations specified in others treaties in the regime.<sup>69</sup> The previously existing nonproliferation regime could be described as one with glaring holes that did not sufficiently address the evolving fundamental threats to proliferation, including the acquisition and utilization of weapons of mass destruction by terrorist organizations.<sup>70</sup> One can draw direct parallels between the problems of the earlier nonproliferation regime and the inadequacies of codified customary international law in preventing dam sabotage by nonstate actors. In fact, a hypothetical security resolution on dam security could even fit within the existing nonproliferation regime, as it would represent a simple expansion, but not drastic modification of the regime. Adding dam sabotage as a means of delivering a weapon of mass destruction under the definitions specified in Resolution 1540 would allow the hypothetical agreement to easily fit within the resolution. The hypothetical resolution could also be a stand-alone agreement within the existing regime.

The U.N. Security Council, an existing institution composed of the most powerful nations in the world, crafted resolution 1540.<sup>71</sup> The forum and institution that is chosen for negotiations plays an integral role in shaping the rules of international agreements.<sup>72</sup> If the proposed agreement on dam security were to be adopted by this existing institution and legal regime, the institutional imprimatur behind the resolution might convince non-state actors like ISIS to finally obey the

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68. Igor Khripunov, *supra* note 44, at 39–42.

69. S.C. Res. 1540, *supra* note 42.

70. Igor Khripunov, *supra* note 44, at 39.

71. U.N.S.C. Current Members (2016/2017) <http://www.un.org/en/sc/members/>.

72. Emily O'Brien & Richard Gowan, *supra* note 47.

law. Nonstate actors would find it increasingly more difficult to transgress international law through dam sabotage if every nation was required to implement certain domestic protections for these structures. In addition, taking action that directly flies in the face of the U.N. Security Council might disincentivize dangerous non-state actors because unlike the UN Security Council, unlike the Red Cross, has the means to punish transgressors. The U.N. Security Council approved military action against Libya in 2011 through Resolution 1973, where a limited military response by the United States, France, and Great Britain brought about the end of the Qaddafi regime within a matter of months.<sup>73</sup> It can be presumed that a cooperative military response from the council would minimally require nonstate actors to heavily weigh the ramifications of dam sabotage.

### Political Buy-In

Another reason that Resolution 1540 is an ideal international agreement on which to base a hypothetical security resolution is because its adoption was a reflection of legitimate political buy-in. *What Makes International Agreements Work* highlights this issue by noting that the success of an international agreement requires legitimate political buy-in with a high degree of consent early on in the process.<sup>74</sup> In other words, successful international agreements require parties to an agreement to see the benefit in their involvement or sacrifice during the initial stage of negotiations. Political buy-in and consent could be effectively determined by evaluating whether the agreement reflects political trends that already exist within key states.<sup>75</sup> Resolution 1540 was adopted during a time when world powers discovered that terrorist organizations were actively pursuing nuclear proliferation, and decided to take swift action to combat the threat on a global scale with binding requirements.<sup>76</sup> The United States took an aggressive role in sponsoring and advocating for the

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73. Larry Everest, *The Fall of the Qaddafi Regime in Libya. The Hand of the U.S. and NATO*, GLOBAL RESEARCH CENTRE FOR RESEARCH ON GLOBALIZATION, Aug. 31, 2011, <http://www.globalresearch.ca/the-fall-of-the-qaddafi-regime-in-libya-the-hand-of-the-u-s-and-nato/26304>.

74. Emily O'Brien & Richard Gowan, *supra* note 47.

75. *Id.*

76. Igor Khripunov, *supra* note 44, at 39.



adoption of Resolution 1540,<sup>77</sup> and the administration under George W. Bush may be directly credited with creating the necessary political buy-in to pass the resolution, evidenced by a unanimous adoption.<sup>78</sup> Likewise, our hypothetical security agreement also reflects preexisting trends because the United States has been actively engaged in assessing risks from the Mosul Dam for nearly a decade.<sup>79</sup> What is more, the Italian government has also taken an active role by sending soldiers and engineers to protect the Mosul Dam in 2016.<sup>80</sup> Continued American and Italian involvement demonstrates a distinct and ongoing trend by world powers in providing dam security to the developing world. Given this trend, Resolution 1540 serves as an exemplary model for our hypothetical resolution on dams because it demonstrates that a similar resolution could be adopted with adequate initiative and sponsorship by a U.N. Security Council member.

Political buy-in might be assumed for developed countries, like the United States, who unilaterally develop security plans to combat terrorism within their own borders in conjunction to mitigating security threats in developing nations.<sup>81</sup> An international agreement that effectively prevents nonstate actors from sabotaging large dams might actually alleviate the amount of resources spent by the United States on protecting large dams worldwide. This would create a significant amount of political buy-in because the expenses and resources spent on protection could instead be shared by a host of other nations. In a comprehensive international framework, developing countries could build their own capacity to combat dam sabotage from nonstate actors with the help of various developed countries. These nations might hesitate because of sovereignty concerns and the perception that this amounts to international meddling with their development. However, these reservations could be offset by the

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77. U.S. Department of State, *Remarks on The U.S. Perspective on UN Security Council Resolution 1540; Remarks to the Asia-Pacific Nuclear Safeguards and Security Conference* (Nov. 8, 2014), <https://2001-2009.state.gov/t/isn/rls/rm/38256.htm>.

78. S.C. Res. 1540, *supra* note 42.

79. Keith Johnson, *U.S. Warns of 'Catastrophic Failure' of Iraq's Mosul Dam*, FOR. POLI. (Feb. 29, 2016), <http://foreignpolicy.com/2016/02/29/u-s-warns-of-catastrophic-failure-of-iraqs-mosul-dam/>.

80. GCR Staff, *Italian Soldiers and Engineers Arrival to Save Mosul Dam*, GLOBAL CONSTRUCTION REVIEW (Apr. 20, 2016), <http://www.globalconstructionreview.com/news/italian-soldiers-and-engineers-arrive-to-save-mosul-dam/>.

81. International Institutions and Global Governance Program, *The Global Regime for Terrorism*, THE COUNCIL ON FOREIGN RELATIONS 39 (June 19, 2013), <http://www.cfr.org/terrorism/global-regime-terrorism/p25729>.

developed world simply paying for security or even providing security upon agreement by specific countries, thus safeguarding developing nations' development. Common but differentiated responsibilities is a prevalent principle of international law and is featured in a number of modern international agreements. For instance, Article 4 of the Paris Accords states “. . . Party's then current nationally determined contribution and reflect its highest possible ambition, reflecting its common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.”<sup>82</sup> One could argue that recognizing the varying capabilities of parties and adjusting responsibilities accordingly would produce a significant level of political buy-in.

On the other hand, properly assessing interest and consent might prove to be more difficult in today's international arena. This is especially true when considering how an issue could be shared by nearly every nation, but not result in political buy-in and consent due to competing agendas like preexisting rivalries and misperceived national interests.<sup>83</sup> The ongoing rift between the United States and Russian Federation perfectly illustrates this notion. During a press conference in December 2016, President Vladimir Putin when referring to the United States noted, “We have a joint responsibility for the provision of international security and stability, for the strengthening of anti-proliferation regimes.”<sup>84</sup> Be that as it may, disagreements over Ukraine and Syria have defined Russian-American relations for a number of years.<sup>85</sup> The preexisting rivalry between these two Security Council members might undermine even the best-laid efforts in creating legitimate political buy-in for a hypothetical security resolution.

Yet, the mere existence of preexisting rivalries does not automatically subject an international agreement to failure. The exemplary nature of Resolution 1540 is partly due to its ability to

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82. U.N. Conference of the Parties Twenty-first session, *Adoption of the Paris Agreement*, at 22, U.C. Doc. FCCC/CP/2015/L.9/Rev.1 (Dec. 12, 2015).

83. LOUIS HENKIN, *HOW NATIONS BEHAVE: LAW AND FOREIGN POLICY* 192 (Columbia University Press, 1979).

84. Andrew Higgins, *A Subdued Vladimir Putin Calls for 'Mutually Beneficial' Ties With U.S.*, N.Y. TIMES (Dec. 1, 2016) [http://www.nytimes.com/2016/12/01/world/europe/vladimir-putin-us-russia.html?\\_r=0](http://www.nytimes.com/2016/12/01/world/europe/vladimir-putin-us-russia.html?_r=0).

85. Damien Sharkov, *Putin's New Foreign Policy Doctrine Claims Nuclear War Unlikely*, NEWSWEEK (Feb. 12, 2016) <http://www.newsweek.com/putin-new-foreign-policy-doctrine-claims-nuclear-war-unlikely-527617>.

overcome existing antagonism. Both France and the United States sponsored the final version of Resolution 1540,<sup>86</sup> albeit French support for the resolution came at a time of hostility between the two nations regarding the American invasion of Iraq.<sup>87</sup> Still, the intertwining goals and interests of France, the United States, the United Kingdom, Russia, and China enabled the adoption of Resolution 1540. These nations recognized how they would all mutually benefit from the agreement as each of them faced the threat of nuclear proliferation by terrorist organizations. In crafting an international agreement to safeguard dams, each veto-wielding member of the council should be able to recognize that the benefits of 1540 are analogous to the hypothetical agreement. Dam sabotage can happen anywhere, but the interconnected nature of our global economy ensures that a catastrophic event in one nation would send shockwaves around the world. President Jimmy Carter in his lecture *Negotiation: An Alternative to Hostility*, dissects the issue of establishing political buy-in with preexisting rivalries. In discussing Soviet-American negotiations, he states “it was desirable to create an umbrella or general framework . . . so that both sides would believe it possible to reach their goals and not lose face.”<sup>88</sup> Through this quote, one can understand that political buy-in and early consent in international agreements might be accomplished by proposing a framework that allows all parties involved to see the agreement as a means to achieve their goals. Resolution 1540 certainly fostered this sentiment, solidifying its role as an exemplary model for a hypothetical resolution aimed at safeguarding dams against sabotage by non-state actors.

## Implementation

In discussing the implementation of Resolution 1540, it is helpful to first define the concept of implementation itself. As identified by Kal Raustiala in *Compliance & Effectiveness in International Regulatory Cooperation*, implementation can be understood as “the process of putting international commitments into practice: the

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86. Veel, *supra* note 60.

87. Paul Belkin, *France: Factors Shaping Foreign Policy, and Issues in U.S.-French Relations*, CONGRESSIONAL RESEARCH SERVICE 2 (Apr. 4, 2011), <https://fas.org/sgp/crs/row/RL32464.pdf>.

88. PRESIDENT JIMMY CARTER, *NEGOTIATION: THE ALTERNATIVE TO HOSTILITY* 15 (Mercer University Press, 1984).

passage of domestic legislation, promulgation of regulations, creation of institutions, and enforcement of rules.<sup>89</sup> A special committee has overseen the implementation of Resolution 1540, including the adoption of domestic laws and establishment of domestic controls. It is referred to as the 1540 Committee, a subsidiary body of the United Nations Security Council, which is comprised of various security and legal experts.<sup>90</sup> It was established under Resolution 1540 and later expanded under Resolution 1977. In 2011, Resolution 1977 was adopted by the United Nations Security Council to foster the proper implementation of Resolution 1540 and extend its mandate.<sup>91</sup> Numerous strategies exist for international agreements to ensure proper implementation,<sup>92</sup> but Resolution 1540 and 1977 deal with implementation through an assistance based approach.<sup>93</sup> As opposed to adopting a deterrence-based strategy, the Security Council recognized that implementation would be more difficult in certain states and created a means for states to ask for assistance.<sup>94</sup> The committee works to connect states who ask for assistance with available sources of assistance: more capable states, international organizations, and regional organizations.<sup>95</sup> The 1977 Resolution undoubtedly provides an important function for nonstate actors. It should be noted that international organizations, NGOs, businesses, and civil society have recently taken a larger role in monitoring proper implementation of international agreements.<sup>96</sup>

The assistance based strategy to implementation is especially important for a hypothetical security agreement on dangerous dams because developing nations such as Iraq are unfortunately incapable of ensuring their own security. As illustrated by the Mosul Dam incident, an implementation strategy that emphasizes assistance will be best suited for the proposed collective security resolution since it would give developing nations a means of seeking support from more powerful actors in the developed world. Only then would these

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89. Kal Raustiala, *Compliance & Effectiveness in International Regulatory Cooperation*, 32 CASE W. RES. J. INT'L L. 387, 392–93 (2000).

90. Igor Khripunov, *supra* note 44, at 40.

91. S.C. Res. 1977, U.N.Doc.S/RES/1922(2011) (Apr. 20, 2011).

92. D. Hunter, J. Salzman, & D. Zaelke, *INTERNATIONAL ENVIRONMENTAL LAW AND POLICY* (Foundation Press, 4th edition, 2011) 364.

93. Igor Khripunov, *supra* note 44, at 40.

94. S.C. Res. 1977, *supra* note 91.

95. Igor Khripunov, *supra* note 44, at 41.

96. D. Hunter, J. Salzman, & D. Zaelke, *supra* note 92, at 364.

nations be able to safeguard dams from sabotage by nonstate actors. In North America alone, countries such as the Bahamas, Belize, and Guatemala have asked for assistance in effectively implementing Resolution 1540, whereas Canada and the United States have extended their support.<sup>97</sup> One would assume a similar level of cooperation and assistance could emerge in the implementation of the hypothetical security resolution. Establishing common but differentiated responsibilities in this new framework could incentivize nations of varying development paths, constitutional frameworks, and capabilities to work together towards a common objective of preventing dam sabotage by nonstate actors.

Critics have voiced concerns that the likelihood of proper implementation of Resolution 1540 is precarious due to scale, resource, and commitment.<sup>98</sup> It is undeniable that Resolution 1540 is difficult to implement, but these challenges have been openly acknowledged. Resolution 1977 recognizes the task of long term implementation and outlines specific assistance mechanisms to bring about proper implementation.<sup>99</sup> Furthermore, efforts to improve implementation are not limited to the 1977 Resolution. During a 2007 committee debate, Japan's representative expressed a need for donor states to step in and provide individualized assistance based on the varying needs of recipients.<sup>100</sup> Revisiting the implementation of an international agreement to ensure proper implementation should not be regarded as a sign of failure, but instead as a responsible means of acknowledging limitations and pragmatically searching for solutions. In addition, the criticism of inadequate implementation might be overstated. During the first two years of implementation, only 32 members of the United Nations formally asked for assistance in implementing the resolution, and just 24 of these 32 made specific requests.<sup>101</sup> If one is to consider that this number of states only

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97. U.N.S.C. Committee, *Note Verbale from Canada on CARICOM's assistance request, Security Council Committee established pursuant to resolution 1540 (2004)* (June 25, 2009), <http://www.un.org/en/sc/1540/assistance/states/Canada.shtml>.

98. Scott Jones, *Resolution 1540: Universalizing Export Control Standards?*, ARMS CONTROL TODAY, VOL. 36, NO. 4 18 (May 2006).

99. S.C. Res. 1977, *supra* note 91.

100. United Nations, Security Council, *Security Council Affirms Determination to Strengthen Cooperation aimed at Countering Nuclear, Chemical, Biological Weapons Proliferation SC/8964* (Feb. 23, 2007), <http://www.un.org/press/en/2007/sc8964.doc.htm>.

101. Scott Jones, *Resolution 1540: Universalizing Export Control Standards?*, ARMS CONTROL TODAY, VOL. 36, NO. 4 20 (May 2006).

represents a small minority of parties subject to Resolution 1540, critique of the resolutions incomplete implementation appears overblown.

Regardless of this disproportional negative commentary, addressing concerns of inadequate implementation has actually reinforced the assertion that Resolution 1540 proves to be an exemplary model for an international security agreement. One risk associated with international cooperation is anticipating the future behavior of treaty parties.<sup>102</sup> Flexibility tools and adaptability have been argued to play a significant role in the success or failure of international agreements.<sup>103</sup> This is especially true of implementation plans, which may need to be adjusted as a result of changed circumstances or unanticipated problems. A hypothetical collective security agreement designed to safeguard dams from sabotage by non-state actors would inherently require a long-term implementation strategy as seen in Resolution 1540. The varying responsibilities and means of implementing the resolution would face similar issues of scale and resources. Accordingly, even criticism of Resolution 1540 supports its role as a model for emulation.

### Compliance Scheme

Compliance in the international arena generally refers to whether an actor adheres to the specific rules outlined in an international agreement.”<sup>104</sup> Yet, the ability to properly monitor compliance is largely dependent upon how clearly party obligations are specified within the framework.<sup>105</sup> The universal and binding nature of Resolution 1540 might lead one to conclude that measuring compliance with this nonproliferation agreement would be a simple task; regrettably, this is not the case. As previously indicated, the mandatory nature of Resolution 1540 only indicates

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102. Richard B. Bilder *Managing the Risks of International Agreement*, UNIVERSITY OF WISCONSIN LEGAL STUDIES RESEARCH PAPER SERIES PAPER NO. 1327 64–65 (University of Wisconsin Press, 1981).

103. Laurence R. Helfer, *Flexibility in International Agreements*, in INTERNATIONAL LAW AND INTERNATIONAL RELATIONS: THE STATE OF THE ART 176 (Jeffrey Dunoff & Mark A. Pollack eds., Cambridge University Press, 2012).

104. Kal Raustiala, *supra* note 89, at 391.

105. D. Hunter, J. Salzman, and D. Zaelke, *supra* note 92, at 371.

what parties must do, but is vague with regard to how they must go about accomplishing their obligations.<sup>106</sup> This creates problems in properly evaluating and maintaining compliance. If proper implementation hypothetically takes place, a party could easily fall out of compliance if competing national interests within a member state results in the repeal or modification of required domestic legislation.<sup>107</sup> One would also need to consider how different national constitutions treat treaty ratification and withdrawal. Similarly, a country could implement required domestic controls, as stipulated in OP 3 of the resolution, but fall out of compliance because they are not able to effectively control their border. A number of parties to Resolution 1540, including Greece, have been unable to adequately protect their borders against the ongoing European migrant crisis.<sup>108</sup> One can infer that this would be more problematic in a developing nation with less resources at its disposal. While stronger enforcement mechanisms could have been added to Resolution 1540 to rectify issues of noncompliance, these mechanisms have been proven to sometimes result in shallow agreements and limit participation in the agreements themselves.<sup>109</sup>

Despite these challenges, compliance to Resolution 1540 can still be viewed as a widely observed phenomenon. As of 2014, over 90 percent of United Nations member states have submitted their mandated national compliance reports; these reports indicate what member states have done or are working on to comply with their obligations.<sup>110</sup> The importance of these reports to the success of the resolutions compliance scheme should not be underestimated. As demonstrated by the Treaty on the Non-Proliferation of Nuclear Weapons, a number of international agreements place obligations on states that already comply with terms of the agreement.<sup>111</sup> Here, countries are actually complying with the agreement by changing their behavior or enacting plans to change their behavior. Adopting the resolution under Chapter VII of the United Nations Charter appears to

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106. Veel, *supra* note 60.

107. Igor Khripunov, *supra* note 44, at 41.

108. Matteo Garavoglia, *Why Europe Can't Handle the Migration Crisis*, THE BROOKINGS INSTITUTE (Oct. 5, 2015), <https://www.brookings.edu/blog/order-fromchaos/2015/10/05/why-europe-cant-handle-the-migration-crisis/>.

109. Emily O'Brien & Richard Gowan, *supra* note 47.

110. Igor Khripunov, *supra* note 44, at 43.

111. Kal Raustiala, *Compliance & Effectiveness in International Regulatory Cooperation*, 32 CASE W. RES. J. INT'L L. 387, 392–93 (2000).

have brought about a surprisingly level of compliance without a direct reference to sanctions in the actual resolution. Moreover, according to Igor Khripunov's *A Work in Progress: UN Security Resolution 1540 After 10 Years*, "No institution tasked with addressing an item atop the global agenda can reach maturity after 10 years."<sup>112</sup> This quote adds needed perspective to Resolution 1540, and enables one to contextualize how its current level of compliance is actually exemplary. A collective security resolution aimed at safeguarding dams against sabotage by nonstate actors would face similar obstacles to compliance. Nevertheless, the hypothetical agreement would still be considered a success if compliance were to be observed on the same level as with Resolution 1540. The compliance scheme of Resolution 1540 therefore further cements its role as an ideal model for emulation.

## Conclusion

The overall objective of this paper is to identify how a comprehensive international framework could be constructed to safeguard dangerous dams against sabotage by nonstate actors. To accomplish this goal, the necessity of an international agreement to manage this security risk needed to be substantiated. This was demonstrated through an essay of the magnitude of devastation which can arise from dam failure, the inadequacies of international law, and the growing threat of dam sabotage in the developing world. Although there is no international framework currently in place to address dam security, upon examination, one can deduce that the United Nations Security Council Resolution 1540 serves as a quintessential model for such a resolution. This assertion has been conveyed through an analysis of the resolutions background, design, binding nature, role in existing legal regime, political buy-in, implementation, and compliance scheme. Moreover, a dissection of the perceived limitations and criticisms of Resolution 1540, especially with regard to its implementation and compliance scheme, actually lends support to the resolution's exemplary nature.

There are certain aspects of this argument that need to be further explored. Future research needs to provide a more detailed figure on the specific dams to be covered under a hypothetical agreement. As seen in the United States, dam safety agencies classify dams according

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112. Igor Khripunov, *supra* note 44, at 43.



to the potential consequences of dam failure in areas located downstream of the structure.<sup>113</sup> The Federal Emergency Management Agency (FEMA) stipulates that hazard potential should be based on the worse-case scenario and factor in the possibility of human causalities.<sup>114</sup> It would need to be determined whether similar guidelines or other national policies could be applied to an international agreement. It would also be helpful to distinguish whether other types of installations containing dangerous forces, such as dykes or nuclear reactors, could be included in the same agreement. Despite the need for further clarification, this paper serves a fundamental purpose in establishing the necessity for an international security agreement to manage a specific security risk, and then exploring how the agreement might be modeled. Hopefully, world powers prioritize this distinct security threat and take swift action in crafting an international agreement. Only a comprehensive international solution can truly ensure that dangerous dams are not sabotaged by hostile non-state actors.

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113. Federal Emergency Management Agency, FEDERAL GUIDELINES FOR INUNDATION MAPPING OF FLOOD RISKS ASSOCIATED WITH DAM INCIDENTS AND FAILURES FEMA P-946 6-2 (July 2013), [https://www.fema.gov/media-library-data/96171edb98e3f51ff9684a8d1f034d97/Dam\\_Guidance\\_508.pdf](https://www.fema.gov/media-library-data/96171edb98e3f51ff9684a8d1f034d97/Dam_Guidance_508.pdf).

114. *Id.* at 5-2.