

# International Obligations to Prevent CBRN Emergency Situations

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## 1 Introduction

This chapter discusses obligations of general scope (applicable to all types of emergency situations regardless of their origin<sup>1</sup>) that are relevant to the prevention phase, *ie* to those activities and measures that are aimed at completely avoiding existing or new disaster risks or at least at minimising the likelihood of their occurrence.<sup>2</sup> It seeks to present an overview of the principle of prevention in international law and to discuss the interplay with other relevant principles (second section); to identify the legal sources of emergency prevention obligations (third)<sup>3</sup> and to clarify their content (fourth). As far as CBRN events are concerned, prevention measures highly depend on the specific circumstances that need to be avoided. Prevention measures applicable to malicious events include, for example, non-proliferation, counterterrorism and intelligence gathering, while prevention measures related to CBRN events in general refer, for instance, to the identification and mapping of different hazards; the identification of gaps emerging in all policy areas relevant to CBRN protection; and the adoption of measures to enhance the clarity and strength of legal and policy instruments aimed at minimising existing and new CBRN risks. This chapter focuses on prevention of CBRN events in general.<sup>4</sup>

1 Prevention obligations related to specific risks are discussed in other chapters in this volume, *ie* ch 7 by Poltronieri Rossetti, ch 11 by Creta, ch 16 by Venier and Part 3 on CBRN weapons.

2 The risk of an emergency is usually determined based on the likelihood and potential magnitude of a (natural or man-made) hazard combined with the level of vulnerability of the community that may potentially be impacted and its capacity to cope. As understood in the present volume, prevention measures aim at minimising the likelihood and magnitude of the hazard, while those measures aimed at either reducing vulnerabilities or at strengthening the capacity to cope are understood as 'preparedness' measures (see ch 1 by Frulli).

3 In order not to overlap with Part 4, this chapter only briefly touches upon International Human Rights Law (IHRL) and International Environmental Law (IEL) and it does not cover prevention obligations under European Union law in order not to overlap with chapters dealing with the regional perspective.

4 Malicious events are covered in ch 7 by Poltronieri Rossetti and in Part 3 on CBRN weapons.

Prevention is discussed here as one of the four phases of emergency management, but some confusion still exists over the definitions of relevant terms. Among the recent clarification efforts, the glossary accompanying the Sendai Framework suggests that ‘mitigation’ refers to ‘the lessening or minimizing of the adverse impacts of a hazardous event’,<sup>5</sup> while prevention is said to refer to ‘activities and measures to avoid existing and new disaster risks’.<sup>6</sup> However, the proposed examples of measures for the implementation of each concept are to some extent overlapping.<sup>7</sup> Interestingly, the glossary emphasises that prevention measures can be taken ‘during or after a hazardous event or disaster to prevent secondary hazards or their consequences, such as measures to prevent the contamination of water’,<sup>8</sup> pointing out that it is the function of a given measure, rather than its timing, that classifies it as a measure aimed at preventing a hazardous event. The glossary also suggests that prevention is linked with preparedness, since the latter should be ‘based on a sound analysis of disaster risks’.<sup>9</sup> It can thus be concluded that prevention focuses on reducing the risk of a given event (by, first of all, identifying and assessing it), while preparedness refers to adopting measures aimed at minimising the potential impacts should the event occur. That said, some measures may support both prevention and preparedness functions, and thus the potential for the two terms to overlap must be acknowledged.

## 2 An Overview of Prevention Obligations in International Law

Under international law, prevention obligations are usually understood as ‘best efforts obligations, requiring States to take all reasonable or necessary measures to prevent a given event from occurring, but without warranting that the

5 UNGA, ‘Report of the open-ended intergovernmental expert working group on indicators and terminology relating to disaster risk reduction’ (1 December 2016) UN Doc. A/71/644 (DRR updated terminology) 20. The Recommendations were endorsed by UNGA Res 71/276 (2 February 2017) UN Doc A/RES/71/276.

6 DRR updated terminology (n 5) 21.

7 Examples of mitigation measures proposed by the DRR terminology include ‘engineering techniques and hazard resistant construction as well as improved environmental and social policies and public awareness’ (ibid 20); examples of prevention measures include ‘dams or embankments that eliminate flood risks, land use regulations that do not permit any settlement in high risk zones, seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake and immunization against vaccine preventable diseases’ (ibid 21).

8 Ibid.

9 Ibid.

event will not occur<sup>10</sup> and are thus obligations to act in a certain way which can be breached by negligent acts or omissions.<sup>11</sup> The content of prevention duties is usually linked to the concept of due diligence, which emerged in the 1870s,<sup>12</sup> developed in particular after the 1950s along with new threats generated by highly dangerous activities that resulted in new standards of care,<sup>13</sup> and is now 'on the rise in all fields of International Law'.<sup>14</sup> The exact parameters of due diligence are difficult to pin down due to their flexible and open-ended nature:<sup>15</sup> the degree of diligence required varies depending on different factors, including the degree of risk and the importance of the interest requiring protection, as well as subjective considerations related to the knowledge and capabilities of the actor responsible for such protection. The requirements also differ over time, since the standards are not static but rather reflect new developments and understandings.<sup>16</sup> As indicated by the International Court of Justice (ICJ) in the *Bosnia and Herzegovina v Serbia and Montenegro Genocide* case, due diligence calls for an assessment *in concreto*.<sup>17</sup>

Prevention obligations arise in different international legal contexts.<sup>18</sup> They first emerged in the field of International Environmental Law (IEL), as applicable to hazardous activities carrying the risk of transboundary damage.<sup>19</sup> Prevention of transboundary harm was enshrined in the Stockholm

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- 10 International Law Commission (ILC), 'Draft Articles on Responsibility of States for internationally wrongful acts, with commentaries' (2001) II(2) UNYBILC, Commentary to Draft Article 14(3) para 14.
- 11 R Barnidge, 'The due diligence principle in International Law' (2006) 8(1) ICLR 95–96.
- 12 *Alabama Claims Arbitration* (1872) 1 Moore Intl Arbitrations 495.
- 13 J Kulesza, *Due Diligence in International Law* (Brill 2016) 4.
- 14 H Krieger and A Peters, 'Due Diligence and Structural Change in the International Legal Order', in H Krieger and A Peters and L Kreuzer (eds), *Due Diligence in the International Legal Order* (OUP 2020) 351.
- 15 Due diligence is described as 'a variable concept' in eg International Tribunal for the Law of the Sea (ITLOS), 'Responsibilities and obligations of States sponsoring persons and entities with respect to activities in the Area' (Advisory Opinion of 1 February 2011) ITLOS Rep 2011, 117.
- 16 ILC, 'Draft Articles on prevention of transboundary harm from hazardous activities' (2001) II(2) UNYBILC, Commentary to Draft Article 3, 154.
- 17 *Application of the Convention on the Prevention and Punishment of the Crime of Genocide (Bosnia and Herzegovina v Serbia and Montenegro)* (*Genocide case*) (Judgment of 26 February 2007) ICJ Reports 2007, para 430.
- 18 G Hafner and I Buffard, 'Obligations of prevention and the precautionary principle' in J Crawford and others, *The law of international responsibility* (OUP 2010).
- 19 For an overview of the principle of prevention under IEL, see N De Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (OUP 2002) ch 2.

and Rio Declarations<sup>20</sup> and found application in numerous international treaties dealing with, for example, marine pollution,<sup>21</sup> climate change,<sup>22</sup> hazardous waste,<sup>23</sup> biological diversity,<sup>24</sup> and desertification.<sup>25</sup> Having been discussed for the first time in the *Trail Smelter* decision in 1938,<sup>26</sup> this principle crystallised through the practice of international tribunals which provided clarifications on its evolving contours.<sup>27</sup> With reference to environmental protection, the ICJ noted that prevention is particularly required 'on account of the often-irreversible character of damage to the environment and of the limitations inherent in the very mechanism of reparation of this type of damage'.<sup>28</sup> In view of these characteristics (*ie* the potential to cause disasters), the principle of prevention is usually complemented by the precautionary principle in situations of scientific uncertainty.<sup>29</sup> According to the ILC Draft Articles on Prevention of Transboundary Harm, appropriate prevention measures include the following:

- 1) the adoption and implementation of national legislation incorporating 'accepted international standards', which will constitute 'a necessary reference point to determine whether measures adopted are suitable';<sup>30</sup>
- 2) the identification, in the first place, of the activities which involve significant risks;

20 UN Conference on the Human Environment, Declaration of the UN Conference on the Human Environment (1972), Principle 21; UN Conference on Environment and Development, Rio Declaration on Environment and Development (1992), Principle 2.

21 International Convention for the Prevention of Pollution of the Sea by Oil (1954) art 3; Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (1972); Convention for the Prevention of Marine Pollution by Dumping from Ships and Aircraft (1972); International Convention for the Prevention of Pollution from Ships (1973).

22 UN Framework Convention on Climate Change (1992) art 3. On the link between climate change and disaster risk reduction, see 'Bali Action Plan' (2007) UN Doc FCCC/CP/2007/6/Add.1, Decision 1/C13, para 1(c)(iii).

23 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989) art 4(2).

24 Convention on Biological Diversity (1992) art 14.

25 UN Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (1994) art 3.

26 *Trail Smelter* (1938) Arbitration Tribunal 33 AJIL 182.

27 This included the customary international law character of the duty to carry out environmental impact assessments, as found in *Case concerning Pulp Mills on the River Uruguay (Argentina v Uruguay)* (*Pulp Mills*) (2010) ICJ Reports 14, para 204.

28 *Gabcikovo-Nagymaros Project* (1997) ICJ Reports 7, para 140.

29 *Pulp Mills*, Separate Opinion by Judge Cançado Trindade, para 61. See also Hafner and Buffard (n 18) 526–531.

30 ILC (n 16) 153.

- 3) the formulation of relevant policies ‘expressed in legislation and administrative regulations and implemented through various enforcement mechanisms’;<sup>31</sup>
- 4) the ‘establishment of suitable monitoring mechanisms’.<sup>32</sup>

International cooperation is also envisaged in Draft Articles 4 (cooperation in prevention activities), 8 (timely notification of the risk to the potentially affected State), 9 (consultation on preventive measures) and 12 (continuous exchange of information related to the activity under scrutiny).

Prevention obligations are enshrined in the United Nations (UN) Charter, as the very purpose of the UN is to maintain international peace and security by taking ‘effective collective measures for the *prevention* and removal of threats to the peace’.<sup>33</sup> Under the UN system, significant attention is thus given to conflict prevention and prevention of the most serious atrocities.<sup>34</sup> Indeed, the UN Secretary-General recently stated in his ‘Report on the prevention of genocide’ that the UN should ‘change the culture of reaction to one of prevention and be prepared to invest the necessary resources’.<sup>35</sup> The report identifies three main avenues for implementing prevention measures: development of adequate national capacities (eg through the adoption and implementation of adequate legal frameworks); participation in cooperation activities (eg through States’ membership in regional and sub-regional initiatives); and development of mechanisms for early detection of threats.<sup>36</sup> As far as the duty to prevent mass atrocities is concerned, the above-mentioned *Genocide* judgment confirmed some elements of the duty to prevent<sup>37</sup> but it generally ‘missed a historic opportunity to give the international community some guidance on the content of the positive obligations to prevent the occurrence of what constitutes the gravest of crimes against humanity’.<sup>38</sup>

31 Ibid 154.

32 Ibid 156. See *Pulp Mills* (n 27) para 197.

33 Charter of the United Nations (1945) art 1(1) (emphasis added).

34 See eg the Convention on the Prevention and Punishment of the Crime of Genocide (1948) art 1; Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment (1984) art 2. For an account of the duty to prevent genocide at the UN level, see J Heieck, *A duty to prevent genocide. Due diligence obligations among the P5* (Edward Elgar 2018).

35 UNGA Report of the Secretary General, ‘Report on the prevention of genocide’ (2019) UN Doc A/HRC/41/24, 3.

36 Ibid 4.

37 *Genocide case* (n 17) para 432.

38 A Gattini, ‘Breach of the Obligation to Prevent and Reparation Thereof in the ICJ’s *Genocide Judgment*’, 18(4) EJIL (2007) 173.

Further clarifications on the contours of the duty to prevent are offered by other areas of international law, including, in particular, due diligence obligations under International Human Rights Law (IHRL).<sup>39</sup> As noted by some scholars, the principle of prevention has recently started to be discussed in the area of International Disaster Law (IDL), an emerging area which is in the process of consolidation.<sup>40</sup> The next section provides an overview of prevention duties as enshrined in international legal instruments within the IDL field.

### 3 Sources of Prevention Obligations as Applicable to Emergency Situations

As recognised by the ILC, an important legal foundation for the duty to reduce the risk of disasters – along with IHRL and IEL – is ‘the widespread practice of States reflecting their commitment to reduce the risk of disasters’<sup>41</sup> as shown by the inclusion of relevant provisions in multilateral, regional, bilateral treaties<sup>42</sup> and by legislation and policy instruments adopted at the national level.<sup>43</sup>

The Convention and Statute establishing an International Relief Union, adopted in 1927, included among its objectives to ‘encourage the study of preventive measures against disasters’.<sup>44</sup> Following this, however, for quite some time emergency prevention was addressed only within the environmental sector or by soft law instruments adopted in the field of Disaster Risk Reduction (DRR, discussed below). It was not until very recently that emergency prevention was included in two multilateral treaties outside the environmental

39 See eg Inter-American Court of Human Rights (IACtHR), *Velasquez Rodriguez v Honduras* (1988) IACtHR ser C No. 4 (174–175); European Court of Human Rights (ECtHR), *Öneryıldız v Turkey* (2005) 41 EHRR 20 (93); *Budayeva and others v Russia* (2014) 59 EHRR 2 (152). For a discussion of positive obligations under IHRL see ch 27 by Venier.

40 B Nicoletti, ‘The Prevention of Natural and Man-Made Disasters: What Duties for States?’ in A de Guttry, M Gestri and G Venturini (eds) *International Disaster Response Law* (Springer 2012) 179; M Sossai, ‘States’ failure to take preventive action as a human rights issue’ in F Zorzi Giustiniani and others (eds), *Routledge Handbook of Human Rights and Disasters* (Routledge 2018) 123; E Sommario, ‘One law to bind them all: International Law and disaster resilience’ in A Harwig and M Simoncini (eds), *Law and the Management of Disasters: The Challenge of Resilience* (Routledge 2016) 247.

41 ILC, ‘Report of the International Law Commission, Protection of Persons in Event of Disasters’ (2016) UN Doc A/71/10, Commentary to Draft Article 9 para 5.

42 Ibid.

43 Ibid para 6.

44 Convention and Statute establishing an International Relief Union (1927) art 2(2).

sector, namely the Framework Convention on Civil Defence Assistance, which requires Member States ‘to explore all possibilities for cooperation in the area of prevention, forecasting [...]’;<sup>45</sup> and the Tampere Convention, which expressly made disaster ‘prediction and mitigation’ a priority, obliging States and other actors, *inter alia*, ‘to facilitate the use of telecommunication resources for disaster *mitigation*’ (emphasis added), to cooperate by sharing information and technologies and to reduce any barriers to the use of telecommunications in this field.<sup>46</sup>

Particularly relevant to the CBRN field is the Convention on Nuclear Safety (CNS) which is entirely devoted to promoting nuclear safety in order to prevent nuclear disasters.<sup>47</sup> The Convention applies to ‘any land-based civil nuclear power plant’ (Article 2(i)) and imposes various prevention obligations, including to ‘ensure that all reasonably practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation’ (Article 6); to establish national safety requirements, a system for licensing, a system of inspections, and to ensure the enforcement of applicable regulations (Article 7); to ensure the safety of installations in relation to their siting (Article 17), design and construction (Article 18) and operation (Article 19). States are not bound by any specific technical benchmarks as those proposed by the IAEA are non-binding safety standards; however, States must submit reports on their implementation of the Convention, which are peer reviewed (Article 5 on Reporting) based on the idea that this process will result in harmonising standards at the global level. Scholars have commented on several weaknesses of the CNS provisions,<sup>48</sup> which were recently confirmed by the Fukushima disaster.<sup>49</sup> In terms of protection against industrial accidents

45 Framework Convention on Civil Defence Assistance (2000) art 4.

46 Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations (1998) art 3 and art 9.

47 Convention on Nuclear Safety (1994); See ILC, ‘Sixth report on the protection of persons in the event of disasters’ (2013) UN Doc A/CN.4/662 33. See ch 11 by Creta.

48 See eg E Benz, ‘Lessons from Fukushima: Strengthening the International Regulations of Nuclear Energy’ (2013) 37(3) *Wm. & Mary Envtl. L. & Pol’y Rev.*

49 As emphasised by eg the Japanese Independent Commission, in terms of risk assessment, Fukushima highlighted the need to take into account the worst-case scenarios, to tailor risk assessments to site-specific hazards and to regularly update these assessments; in terms of safety standards and monitoring, the disaster highlighted the importance of having an independent nuclear regulatory authority at the domestic level and mandatory safety standards at the international level. The National Diet of Japan, ‘The official report of the Fukushima Nuclear Accident Independent Investigative Commission. Executive Summary’ (The National Diet of Japan, 2012); A Cavoski, ‘Revisiting the Convention on Nuclear Safety: Lessons Learned from the Fukushima Accident’ (2013) 3 *AsianJIntL* 365.

more generally, the International Labour Organization (ILO) Prevention Convention ensures the protection of workers against the risk of major industrial accidents.<sup>50</sup>

Nowadays, a wide variety of regional instruments<sup>51</sup> and bilateral agreements<sup>52</sup> on emergency management include provisions on prevention duties. For instance, the UN Economic Commission for Europe (UNECE) Convention on the Transboundary Effects of Industrial Accidents, which applies to 'any activity involving hazardous substances' (Article 1(a)),<sup>53</sup> imposes obligations on States Parties to take 'appropriate legislative, administrative and financial measures' (Article 3) and to cooperate to implement their prevention obligations (Article 6). Examples of relevant ad hoc measures include identifying hazardous activities and performing risk assessments; setting specific safety objectives; adopting legislative provisions and guidelines; applying 'the most appropriate technology in order to prevent industrial accidents'; and educating and training all persons engaged in hazardous activities, to ensure that safety regulations are implemented internally and that adequate monitoring mechanisms (including on-site inspections) are in place. Pursuant to Article 9(2), the public shall be given the opportunity to participate in decision making about hazardous installations.

Looking at other regional actors, since the adoption of the Helsinki Final Act in 1975, the Organization for Security and Cooperation in Europe (OSCE) recognises the importance of cooperation in DRR activities.<sup>54</sup> The cornerstone of OSCE efforts in this field is the Basel Ministerial Decision on Enhancing Disaster Risk Reduction, adopted in 2014,<sup>55</sup> which encourages Participating States to adopt an integrated DRR strategy; to exchange relevant technologies and know-how; to incorporate local knowledge and to raise risk awareness at the local level; and to strengthen the exchange of knowledge and experience among States. In Asia and the Pacific, the ASEAN Agreement on Disaster

50 ILO Convention concerning the Prevention of Major Industrial Accidents (1993).

51 For an overview of regional agreements, see ILC (n 41) 35ff; for the EU, see ch 14 by Ferri.

52 See eg the Agreement between the Government of the Hellenic Republic and the Government of the Russian Federation on Cooperation in the Field of Prevention and Response to Natural and Man-Made Disasters (2000); Agreement between the Government of the French Republic and the Government of Malaysia on Cooperation in the Field of Disaster Prevention and Management and Civil Security (1998) preambular para 4.

53 Convention on the Transboundary Effects of Industrial Accidents (1992) art x.

54 For an overview, see <<https://www.osce.org/oceea/disaster-risk-reduction>> (all links were last accessed on 3 December 2021).

55 21st OSCE Ministerial Council, Decision No. 6/14 on Enhancing Disaster Risk Reduction (5 December 2014).



Management and Emergency Response contains three categories of DRR obligations, namely risk identification and monitoring (Article 5), prevention and mitigation (Article 6), and disaster preparedness (Article 7).<sup>56</sup> As far as the first two are concerned, States Parties are under the obligations to identify all disaster risks within their territory and to assign disaster risk levels to each potential hazard according to agreed criteria, as well as to identify, prevent and reduce risks arising from hazards by adopting adequate frameworks, allocating necessary resources, promoting public awareness and education, and promoting and utilising indigenous knowledge and practice.

Resolutions of the UN General Assembly (UNGA) have long recognised the crucial role of disaster prevention.<sup>57</sup> Since the late 1980s, UNGA Resolutions have been critical to establishing and supporting what is nowadays known as DRR, and they remain the key vehicle for clarifying the contours of the duty to prevent disasters at the international level.<sup>58</sup> In the first DRR strategy, the Yokohama Strategy (1995–2005), States were called upon to develop a ‘global culture of prevention as an essential component of an integrated approach to disaster reduction’, by focusing on education and training in disaster prevention; improving awareness in vulnerable communities; improving risk assessments and warnings; implementing effective national legislation and administrative action; and improving coordination and cooperation at the international and regional levels.<sup>59</sup> The Hyogo Framework (2005–2015),<sup>60</sup> which built upon the lessons learned in the previous decade, identified four priorities for action devoted to prevention (with a fifth dedicated to preparedness), namely to ensure that DRR is a priority at the national level; to identify, assess and monitor disaster risks; to use knowledge, innovation and education to build a culture of knowledge; and to reduce the underlying risk factors.

Nowadays, three out of four priorities of the Sendai Framework (2015–2030)<sup>61</sup> focus on disaster prevention, namely understanding disaster risk,

56 ASEAN Agreement on Disaster Management and Emergency Response (2005).

57 Recently, UNGA Res 243 (23 December 2014) UN Doc A/RES/69/243, op para 44 (urging States to prioritise risk management and shift towards an anticipatory approach to humanitarian crises); for a compilation of the UN Resolutions on disaster prevention up to 2009, see OCHA, ‘Compilation of United Nations Resolutions on Humanitarian Assistance’ (2009), s 7, 69ff.

58 See UNGA Res 236 (22 December 1989) UN Doc A/RES/44/236.

59 UN World Conference on Natural Disaster Reduction, ‘Yokohama Strategy for a Safer World: Guidelines for Natural Disaster Prevention, Preparedness and Mitigation, and Plan for Action’ (1994) UN Doc A/CONF.172/9.

60 Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters (2006) UN Doc A/CONF.206/6.

61 Sendai Framework for Disaster Risk Reduction 2015–2030 (2015) UN Doc A/CONF.224/L.2.

strengthening disaster risk governance and investing in DRR. The Sendai Framework emphasises that disaster risk should be understood ‘in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment’ (para 23). National authorities are called upon to promote the collection, systematic evaluation, periodical update and dissemination of disaster risk information to all potentially interested groups, and to promote dialogue among scientific and technical communities. At the regional and global levels, international disaster risk maps should be developed and effective regional and global campaigns should be promoted as instruments for public awareness and education. Recommendations for strengthening DRR include mainstreaming it into all policies and sectors and improving coordination; promoting mechanisms for disaster risk transfer and insurance; risk-sharing and retention; and financial protection. Regional DRR strategies have also been defined that propose priorities for actions similar to the ones of the Sendai Framework.<sup>62</sup>

#### 4 Clarifying the Content of the Obligation to Prevent Emergency Situations

The lack of a comprehensive instrument covering protection against disasters at the international level, along with the difficulties in delimiting the contours of prevention due to its flexible and evolving character, do not allow an easy identification of the exact content of emergency prevention duties under international law. Nevertheless, from the previous analysis some key obligations emerge: (i) the duty to adopt adequate legal and regulatory frameworks and implement ad hoc risk mitigation measures targeted at specific risks; (ii) the duty to perform risk assessment, mitigation and awareness activities; and (c) the duty to cooperate in prevention activities with other States and in international and regional fora.<sup>63</sup> These prevention duties have been confirmed under the

62 Examples include the European Roadmap for Disaster Risk Reduction (2015–2030), <[https://www.preventionweb.net/files/48721\\_efdrroadmap20152020anditsactions20.pdf](https://www.preventionweb.net/files/48721_efdrroadmap20152020anditsactions20.pdf)>; Africa Regional Strategy for Disaster Risk Reduction (2004), <[https://www.preventionweb.net/files/4038\\_africaregionalstrategy1.pdf](https://www.preventionweb.net/files/4038_africaregionalstrategy1.pdf)>; APEC Framework on Disaster Risk Reduction (2015–2030), <[http://mddb.apec.org/Documents/2015/SOM/CSOM/15\\_csom\\_002.pdf](http://mddb.apec.org/Documents/2015/SOM/CSOM/15_csom_002.pdf)>.

63 Similarly, Nicoletti (n 40) found that emergency prevention is realised through the duties to assess the risk, to cooperate in prevention activities and to warn. Interestingly, Sossai has emphasised that the duty to prevent contains not only obligations of conduct but also obligations of result, which include the duty to adopt adequate administrative, legal and institutional frameworks. See Sossai (n 40) 123.

ILC Draft Articles on the Protection of Persons in the Event of Disasters. Draft Article 9 establishes the basic obligation to reduce the risk of disasters by taking certain measures (including through legislation and regulation) and provides an indicative list of the most prominent types of contemporary DRR efforts, including the conduct of risk assessments, the collection and dissemination of risk and past loss information, and the installation and operation of early warning systems.<sup>64</sup>

Looking at the adoption of adequate legal and regulatory frameworks and of ad hoc risk mitigation measures, legislation is generally recognised as being the most effective way to facilitate the taking of DRR measures at the domestic level and should be understood 'in broad terms to cover as many manifestations of law as possible'.<sup>65</sup> It may be asked what a legal, policy and administrative framework would need to address to be 'adequate' in these contexts. The International Federation of the Red Cross and Red Crescent Societies (IFRC) 'Handbook on Law and Disaster Risk Reduction' provides some indications on this<sup>66</sup> and some examples of national implementation have also emerged.<sup>67</sup> The IFRC has also developed a ten point checklist on law and DRR,<sup>68</sup> which refers to the need for a law dedicated to DRR establishing clear roles and responsibilities and allocating adequate resources; mainstreaming DRR in other sectors; the promotion of education, training and awareness-raising on DRR; the inclusion of multiple actors in decisions and activities with particular attention devoted to gender issues and vulnerable groups; and the establishment of monitoring mechanisms. Generally speaking, there is an increased recognition that in elaborating DRR frameworks States must engage with

64 At the 4th session of the Global Platform for Disaster Risk Reduction, held in Geneva in 2013, it was affirmed that 'there is a growing recognition that the prevention and reduction of disaster risk is a legal obligation, encompassing risk assessments, the establishment of early warning systems, and the right to access risk information'. UNISDR, 'Proceedings of the Fourth Session of the Global Platform for Disaster Risk Reduction. Chair's Summary' (UNISDR 2013) 13. Note that early warning is not discussed in this chapter as it is usually understood as a preparedness measure.

65 ILC (n 41) Commentary to Draft Art 9, para 12.

66 IFRC and UNDP, 'The Handbook on Law and Disaster Risk Reduction' (IFRC and UNDP 2015).

67 National Implementation Reports are available on the Disaster Law Programme Website at <https://www.ifrc.org/en/what-we-do/disaster-law/research-tools-and-publications/disaster-law-publications/>. A detailed report is IFRC and UNDP, 'Implementing the Law on Disaster Management in Cambodia. Developing subsidiary Legislation' (2017) <<https://www.ifrc.org/docs/IDRL/Cambodia%20DM%20Subsidiary%20Legislation%20Report%20LR.PDF>>.

68 IFRC and UNDP, 'The Checklist on Law and Disaster Risk Reduction' (IFRC and UNDP 2015).

key stakeholders and with the public at large. One of the guiding principles of the Sendai Framework affirms that DRR requires an ‘all-of-society engagement and partnership’ as well as ‘inclusive, accessible and non-discriminatory participation, paying particular attention to the most vulnerable groups.’<sup>69</sup> In their concluding observations, UN HR monitoring bodies have indeed started to encourage States to collect the views of the most vulnerable groups while developing DRR frameworks.<sup>70</sup>

Regional HR Courts have provided some further guidance on what a legal and administrative framework has to cover to be considered adequate. For instance, the European Court of Human Rights (ECtHR) clarified that, in the context of dangerous industrial activities, regulations must at least govern the ‘licensing, setting up, operation, security and supervision of such activities’, while also emphasising more general requirements, such as ensuring the public’s right to information and providing appropriate procedures for identifying any shortcomings in the processes concerned and any errors committed by those responsible at different levels.<sup>71</sup>

International organisations (IOs) and other actors offer legislative assistance to Member States on the domestic implementation of international obligations. For instance, the 1540 Committee established pursuant to Security Council Resolution 1540 on CBRN terrorism, has developed a matrix covering key prevention measures to be included in domestic legislation, such as the ratification of international and regional arms control and disarmament treaties; the adoption of laws that prohibit and penalise the conduct mentioned in SC Resolution 1540; and the availability of mechanisms to account for, govern the export of and secure dangerous material.<sup>72</sup> Legislative assistance is also provided by the Organisation for the Prohibition of Chemical Weapons (OPCW), which has published a ‘National Legislation Implementation Kit’ arranged according to the provisions of the Chemical Weapons Convention,<sup>73</sup> and by the IAEA, which has recently strengthened its efforts to support States in adopting adequate legislation in the nuclear sector through the publication of the ‘Handbook on Nuclear Law’.<sup>74</sup>

69 Sendai Framework (n 61) para 19(d).

70 E Sommaro and S Venier, ‘Human Rights Law and Disaster Risk Reduction’ (2018) 49 QIL Zoom-in <<http://www.qil-qdi.org/human-rights-law-disaster-risk-reduction/>> See also ch 27 by Venier.

71 *Öneryıldız* (n 39) para 90.

72 1540 Committee, ‘Matrix Template’, <<http://www.un.org/en/sc/1540/national-implementation/1540-matrices/matrix-template.shtml>>.

73 OPCW, ‘National Legislation. Implementation Kit for the Chemical Weapons Convention. ‘Initial measures’ (OPCW 2012).

74 IAEA, ‘Handbook on Nuclear Law – Implementing Legislation’ (IAEA 2010).

Moving on to the duty to perform risk assessments, this 'is about generating knowledge concerning hazards, exposure and vulnerabilities as well as disaster risk trends' and 'it is the first step towards any sensible measure to reduce the risk of disasters'.<sup>75</sup> As discussed in the second section above, the requirement of risk assessment has particularly developed within IEL and has been incorporated in various forms in many international agreements related to the protection of the environment, and is now part of customary international (environmental) law.<sup>76</sup> The modalities to conduct the assessment are normally left to national legislation. Appendix II of the Environmental Impact Assessment (EIA) Convention is an exception since it lists nine items as determining the content of the EIA, including a description of the proposed activity and of alternatives; a description of the potential environmental impact and the mitigation measures taken; an identification of gaps and uncertainties encountered when compiling the EIA; as well as an outline of the monitoring mechanisms in place.

In relation to nuclear accidents, key requirements for risk assessments have emerged from the Fukushima disaster, such as the need for assessments to take into account the worst-case scenarios, to be regularly updated, and to be carried out by an independent authority.<sup>77</sup> It is common understanding that knowledge of the risk should be gained through both specific and multi-hazard risk assessments that also consider cascading effects and that assessments should be discussed with interested parties and the population potentially affected. Section v of the Sendai Framework on the role of non-State stakeholders puts emphasis on involving civil society; ensuring participation of vulnerable groups; engaging with the academic and technological communities to support the assessment of risks and transfer of knowledge; and engaging with the media. Furthermore, UN HR monitoring bodies have recommended that the data collected on disaster loss should be disaggregated by sex, income and disability.<sup>78</sup> Once the risk has been assessed, a key activity is to enhance awareness among the potentially affected population (not discussed here since it generally refers to preparedness).

Turning our attention to the last obligation, *ie* the duty to cooperate, relevant instruments at the international, regional and bilateral levels contain provisions on international cooperation in disaster prevention,<sup>79</sup> to which the

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75 ILC (n 41) Commentary to Draft Art 9, para 20.

76 See eg Convention on Environmental Impact Assessment in a Transboundary Context (1991); see also the treaties included in ILC (n 16) fn 900.

77 Japanese Independent Commission (n 49).

78 Sommario and Venier (n 70).

79 These are presented in ILC (n 41) 27ff.

ILC's Draft Article 7 is also devoted as it covers cooperation both on prevention and response. As recognised by the Sendai Framework, cooperation is indispensable for ensuring effective protection, as it complements the primary duty of the authorities of the affected State to take care of the population under its jurisdiction.<sup>80</sup> The forms of cooperation on disaster prevention may vary a lot, but at the very least they shall include the exchange of information on disaster risks and on the prevention (and preparedness) measures adopted to mitigate these risks at the domestic level, as well as the training of experts on disaster prevention and prediction.<sup>81</sup>

International cooperation should also aim at establishing harmonised measures for those hazards that are likely to have transboundary implications, such as in the case of nuclear accidents. In these cases, the divergence between the prevention and preparedness frameworks adopted by neighbouring States may become a matter of concern as they create uncertainty and confusion. A study conducted by the Dutch Safety Board, for instance, has discussed this issue in depth in the nuclear sector, assessing the degree of cooperation between authorities in Belgium, the Netherlands and Germany, and identifying several gaps that should be addressed, with respect to coordination of licensing procedures, supervision of nuclear power plants and establishment of similar crisis management procedures.<sup>82</sup>

## 5 Concluding Remarks

The present chapter has provided an overview of the sources and content of the obligations to prevent emergency situations under international law. The concept of prevention is usually implemented through obligations of conduct, the scope of which depends on the seriousness of the risk and its likely transboundary character, as well as on the responsible State's knowledge and capacity to act. The legal foundations of the duty to reduce the risk of disasters are obligations enshrined in different legal contexts, in particular under IHRL, IEL, IDL and domestic legislation. Although the primary responsibility to take

80 Sendai Framework (n 61) guiding principle 19(a).

81 See eg France-Italy, Convention in the Area of the Prediction and Prevention of Major Risks and on Mutual Assistance in the Event of Natural or Man-Made Disasters (1992) art 1.

82 Dutch Safety Authority (DSA), 'Cooperation on Nuclear Safety' (DSA 2018). No international agreement seems to have been adopted among the three States on these issues until now.

action to reduce the risk of disasters rests on public authorities, a variety of stakeholders are involved in disaster prevention activities. Of particular note is the increasingly important role of IOs, and of soft law instruments adopted under their auspices, in clarifying the content of the duty to prevent.

Despite the difficulties in clearly delimiting its content, the chapter has proposed three types of corollary duties, namely the duty to adopt adequate legal and regulatory frameworks and ad hoc risk mitigation measures; to perform risk assessment and mitigation activities; and to cooperate in prevention activities with other States and in international and regional fora. Further clarifications on the exact requirements of these obligations are generally provided by soft law instruments adopted within the DRR field, as well as recommendations and guidance documents created by IOs and other actors, including UN HR monitoring authorities. The level of implementation that has been achieved in relation to the prevention obligations outlined in this chapter, and the effectiveness of relevant enforcement mechanisms, are assessed in the chapters dealing with prevention of specific CBRN risks and with specific fields of law such as IHRL and IEL.

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