

**Strengthening International Governance Systems
to Respond to Environmental Emergencies**

***A Baseline Review of
Instruments, Institutions, and Practice***

January 2009

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Prepared for the Joint UNEP/OCHA Environment Unit

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EXECUTIVE SUMMARY

International systems governing response to environmental emergencies are at a crossroads. In recent years, States and international organizations have established a growing number of agreements, institutions, and guidelines. These frameworks have been adopted to address specific needs at the international and regional levels. However, there is no overarching framework within which the different institutions and agreements operate. As a result, there is fragmentation, gaps in the international systems, and limited coordination.

For more than a decade, the Joint UNEP/OCHA Environment Unit (JEU) has been a central resource for coordinating response to environmental emergencies. Together with the Advisory Group on Environmental Emergencies (AGEE), for which it serves as secretariat, the JEU has undertaken to review experiences to date and identify ways to improve international awareness and response to environmental emergencies. This review process is known as the Rosersberg Initiative, after the Swedish town where it was launched in June 2007, during the seventh meeting of the AGEE. The Rosersberg Initiative identified three thematic areas: (1) advocacy and strengthened international response capacity; (2) improving international environmental emergency governance systems; and (3) operational aspects of providing and receiving international environmental emergency assistance.

Following the AGEE's determination that the international systems governing response to environmental emergencies have a number of weaknesses, this *Baseline Review* focuses on strengthening international governance systems to respond to environmental emergencies – Thematic Area 2 of the Rosersberg Initiative. This *Baseline Review* identifies ways to improve capacity of the international system to respond to environmental emergencies, particularly in light of growing demands for assistance. Analysis endorsed by the AGEE and supplemented by this *Baseline Review* has identified and analyzed the priority needs.

Priority needs include the lack of a comprehensive international system and procedures for notification, assistance, and the movement of experts, equipment, and materials. There is no clear, overarching mandate or legal framework for responding to environmental emergencies. There are many international and regional systems, but these are fragmented, covering different geographic ranges, types of emergencies, and modalities for responding to the emergencies. Moreover, the lack of detailed provisions and guidance generate uncertainties about application, obligations, and procedures, limiting the effective operationalization of the frameworks. Lack of awareness and capacity further impedes implementation. Finally, the fragmented development of systems for responding to environmental emergencies has left gaps where no law or institution clearly applies.

There is no clear, overarching mandate or legal framework for responding to environmental emergencies.

This situation is natural and to be expected. As a broad field, environmental emergencies response is still evolving, and the various institutions and frameworks have not yet been consolidated. In order to more efficiently and effectively respond to environmental emergencies, it will be necessary to develop a stronger, more coherent international governance system.

Efforts to strengthen the international systems governing response to environmental emergencies can draw upon the experiences and lessons learned of numerous regional and international approaches. Some of these approaches relate specifically to environmental emergencies. Other approaches address disasters more broadly, including the Oslo Guidelines on the Use of Military and Civil Defence Assets in Disaster Relief, the Black Sea Economic Cooperation (BSEC) Agreement, and the Association of South East Asian Nations (ASEAN) Emergency Response Agreement. Still others address broader issues, but include provisions relevant to disasters and environmental emergencies, such as river basin treaties and various conventions of the International Maritime Organization (IMO). Some approaches focus on specific response tools, such as communications (Tampere Convention on the Provision of Telecommunication Resources for Disaster

This Baseline Review examines the experiences of these different approaches, including lessons learned from 20 frameworks in addition to 15 agreements governing international watercourses.

Mitigation and Relief Operations) or search and rescue (International Search and Rescue Advisory Group (INSARAG) Guidelines). Other approaches may be relevant even if they do not address environmental emergencies directly; these include, for example, the two International Atomic Energy Agency (IAEA) conventions on notification and assistance in the event

of nuclear accidents. In addition to international instruments, there is a growing body of regional approaches in Central America (CEPREDENAC), Southeast Asia (two agreements of the Association of Southeast Asian Nations (ASEAN)), and the Black Sea region (BSEC Agreement and Protocol), as well as elsewhere. This *Baseline Review* examines the experiences of these different approaches, including lessons learned from 20 frameworks in addition to 15 agreements governing international watercourses.

These diverse approaches and experiences have mixed results. Some are very effective, others problematic, and a few could most charitably be termed underutilized. By comparing and contrasting the approaches and experiences, it is possible to identify some lessons learned that could strengthen international governance of environmental emergencies. What are the different approaches? What has been effective and problematic? Why? Could or should these approaches be adapted to other contexts? Where is there common ground? These experiences could and should inform efforts to improve the effectiveness and efficiency of the international systems governing response to environmental emergencies.

Based on the identified needs and informed by experiences to date, this *Baseline Review* identifies three core ways to strengthen the international systems governing response to environmental emergencies. These entail (1) operational measures, (2) capacity building and awareness raising measures, and (3) legal and policy measures.

Operational response to environmental emergencies can be improved through development and implementation of a Joint Plan for Environmental Emergencies, guidance, and, in the long-term, a certification system. A Joint Plan could improve coordination among key international (and potentially regional) institutions by clearly delineating the respective roles of relevant institutions and establishing clear procedures for communication, coordination, and cooperation. Guidance can improve notification and assistance by providing clear procedures for States, international organizations, and non-governmental organizations (NGOs); guidance can also be invaluable in providing the necessary detail to operationalize more general mandates in existing frameworks. A system for certifying response teams can standardize and improve the quality of assistance in responding to environmental emergencies. These operational coordination mechanisms can also facilitate transition from initial emergency response to longer-term recovery.

Operational response to environmental emergencies can be improved through development and implementation of a Joint Plan for Environmental Emergencies

In order to improve the effectiveness of international governance systems, **capacity building and awareness raising** are also necessary. States, regional bodies, and NGOs, as well as staff in international organizations, would respond more effectively if they were more aware of the opportunities for assistance, knew how to request assistance, and were able to efficiently provide assistance where necessary. Accordingly, a concentrated initiative to raise awareness and conduct training – including by integrating training on environmental emergencies into other training courses – would strengthen the effectiveness of existing and new international frameworks governing response to environmental emergencies. Capacity building would be further enhanced by the establishment of an international center to provide training, training and awareness raising resources, and technical assistance. Considering the uneven effectiveness to date of different regional systems in responding to environmental emergencies, capacity building efforts could strengthen regional systems through training, technical assistance, improved cooperation, and joint projects.

A concentrated initiative to raise awareness and conduct training would strengthen the effectiveness of existing and new international frameworks governing response to environmental emergencies.

Strengthening the **legal and policy frameworks** underpinning international governance systems are also essential. Many measures can be taken to raise awareness, build capacity, and improve operational effectiveness. However, until there is an effective legal mandate and framework governing notification and response to environmental emergencies these measures will not enjoy the full legitimacy or status of other international systems. A clear mandate from the United Nations General Assembly (UNGA), for example through a UNGA Resolution, to the UN Environment Programme (UNEP) and the UN Office for the Coordination of Humanitarian Affairs

A clear mandate from the United Nations General Assembly (UNGA) would provide a valuable touchstone

(OCHA) would provide a valuable touchstone for many of the measures proposed in this *Baseline Review*. Similarly, a new international legal instrument governing notification and response to environmental emergencies could address institutional matters and set forth standards, procedures, and other requirements for notice and assistance.

Development and implementation of operational, capacity building, and legal measures can both strengthen existing frameworks and address currently outstanding issues, including a variety of normative gaps in existing frameworks, such as responding to marine emergencies arising from land-based sources or from armed conflict; transporting samples that are potentially hazardous; and environmental emergencies that are severe but not necessarily transboundary. Addressing these issues will require a combination of research and conceptual development, pilot-testing of approaches, development of guidance, and capacity building.

Next Steps

In order to identify the priority action items from among the recommendations in this *Baseline Review* and build political support for strengthening international systems governing response to

The JEU should convene a Working Group of high-level government officials and technical experts.

environmental emergencies, the JEU should convene a Working Group of high-level government officials and technical experts. This Working Group could provide political and technical guidance for the priority measures, the timing for the measures, who should undertake which

measures, and how to ensure that there are the necessary resources to implement the measures. The 2009 meeting of AGEE provides an opportunity to consult the Working Group, perhaps undertake a few measures immediately, report on the progress, seek feedback from the AGEE on how to proceed, and chart a course to 2012 and beyond.

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LIST OF ACRONYMS

AGEE	Advisory Group on Environmental Emergencies
AHA Centre	ASEAN Coordinating Centre for Humanitarian Assistance on disaster management
APELL	Awareness and Preparedness for Emergencies at Local Level (of UNEP)
ASEAN	Association of Southeast Asian Nations
BSEC	Black Sea Economic Cooperation
CECIS	common emergency communication and information system (of the Community Mechanism)
CEPREDENAC	Coordination Center for the Prevention of Natural Disasters in Central America (Centro de Coordinación para la Prevención de los Desastres Naturales en América Central)
CMCS	Civil Military Coordination Section (of OCHA)
COP	conference of the parties
EADRCC	Euro-Atlantic Disaster Response Coordination Centre (of NATO)
ENATOM	Emergency Notification and Assistance Technical Operations Manual
ERC	Emergency Relief Coordinator (of the United Nations)
EU	European Union
FEAT	Flash Environmental Assessment Tool
GFMC	Global Fire Monitoring Center
IACRNA	Inter-Agency Committee on Response to Nuclear Accidents (under the Joint Plan, administered by the IAEA)
IAEA	International Atomic Energy Agency
IAN	Industrial Accident Notification System (IAN) (UNECE)
IDRL	International Disaster Response Laws (of the IFRC)
IEC	INSARAG External Classification
IFRC	International Federation of Red Cross and Red Crescent Societies
ILO	International Labour Organization
IMO	International Maritime Organization
INSARAG	International Search and Rescue Advisory Group
IOPC	International Oil Pollution Compensation (Funds)
JEU	Joint UNEP/OCHA Environment Unit
LBS	land-based source (of pollution to the marine environment)
MARPOL	International Convention for the Prevention of Pollution from Ships
MCDA	military and civil defence assets
MEA	multilateral environmental agreement
MIC	Monitoring and Information Centre (of the Community Mechanism)
NATO	North Atlantic Treaty Organization
NGO	non-governmental organization
OCHA	Office for the Coordination of Humanitarian Affairs (of the UN)
OPRC	International Convention on Oil Pollution Preparedness, Response and Co-operation
OPRC-HNS	Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances
OSOCC	On-Site Operations Coordination Centre (e.g., INSARAG Guidelines)
PRRD	Plan Regional de Reducción de Desastres (of CEPREDENAC)
RANET	Response Assistance Network (of the IAEA)
RDC	reception departure centre (under INSARAG Guidelines)
REMPEC	Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea
SADC	Southern African Development Community

SAR	International Convention on Maritime Search and Rescue
SOLAS	International Convention for the Safety of Life at Sea
UN	United Nations
UNCUEA	United Nations Centre for Urgent Environmental Assistance (the predecessor of the JEU)
UNDAC	United Nations Disaster Assessment and Coordination
UN DHA	UN Department of Humanitarian Affairs (the predecessor of UN OCHA)
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
UNGA	United Nations General Assembly
UNISDR	United Nations International Strategy for Disaster Reduction
USAR	urban search and rescue

Many of the governance frameworks analyzed and referenced in this *Baseline Review* have lengthy names. For simplicity and readability, this *Baseline Review* utilizes the following short forms of their full titles:

ASEAN Emergency Response Agreement:

(Association of Southeast Asian Nations) Agreement on Disaster Management and Emergency Response

ASEAN Haze Agreement:

(Association of Southeast Asian Nations) Agreement on Transboundary Haze

BSEC Agreement:

Agreement among the Governments of the Participating States of the Black Sea Economic Cooperation (BSEC) on collaboration in Emergency Assistance and Emergency Response to Natural and Man-Made Disasters

CEPREDENAC:

Constitution Agreement of the Coordination Center for the Prevention of Natural Disasters in Central America

Community Mechanism:

(European) Community Mechanism for Civil Protection, including the Monitoring and Information Centre (MIC)

IFRC Guidelines:

International Federation of the Red Cross and Red Crescent (IFRC) Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance

IAEA Assistance Convention:

(IAEA) Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency

IAEA Notification Convention:

(IAEA) Convention on Early Notification of a Nuclear Accident

ILO Convention:

The Convention concerning the Prevention of Major Industrial Accidents, adopted by the International Labour Organization

IMO Conventions:

International Maritime Organization Conventions governing various aspects of response to environmental emergencies, including the International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC); Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances (OPRC-HNS); International Convention on Maritime Search and Rescue (SAR); International Convention for the Safety of Life at Sea (SOLAS); and International Convention for the Prevention of Pollution from Ships (MARPOL)

INSARAG Guidelines:

International Search and Rescue Advisory Group Guidelines

Joint Plan:

The Joint Radiation Emergency Management Plan of the International Organizations

MCDA Guidelines:

The Guidelines on the Use of Military and Civil Defence Assets To Support United Nations Humanitarian Activities in Complex Emergencies (supplementing the Oslo Guidelines)

Oslo Guidelines:

Oslo Guidelines on the Use of Military and Civil Defence Assets in Disaster Relief

Tampere Convention:

Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations

UNECE Industrial Accidents Convention:

United Nations Economic Commission for Europe (UNECE) Convention on the Transboundary Effects of Industrial Accidents

INTRODUCTION AND BACKGROUND

Since its earliest days, humanity has faced the threat of environmental emergencies. Earthquakes, hurricanes, wildland fires, and the occasional tsunamis, are just few examples of sudden onset natural disasters that have negative environmental impacts. As civilizations and technology have grown, so have the types of threats and the vulnerabilities. In addition to natural threats, there are now industrial accidents, oil spills, collapsing mines, breaches in dams, land slides, and armed conflict and other complex emergencies, among others.

This *Baseline Review* takes a broad view of environmental emergencies. An environmental emergency can be defined as a sudden onset disaster or accident resulting from natural, technological, or human-induced factors, or a combination of these, that causes or threatens to cause severe environmental damage as well as harm to human health and/or livelihoods. The incident need not be transboundary – indeed most environmental emergencies have only domestic effects. However, there is usually some international aspect, typically in the form of a request for international assistance when local capacities are surpassed.

A growing number of frameworks have emerged to respond to environmental emergencies, particularly in developing countries with limited in-country capacity to respond to serious disasters. As outlined in the table, below, on “Summary of Frameworks Governing Environmental Emergencies,” these frameworks include a wide range of international and regional frameworks. They typically address a specific issue, region, or response modality. Those that are broad tend to be non-binding guidelines, often adopted by institutions other than the United Nations (such as the Red Cross and Red Crescent Movement).

It is illustrative to compare responses to the accidents at Chernobyl, Ukraine (1986) and Bhopal, India (1984), which occurred less than 17 months apart. Within a few months of the Chernobyl nuclear accident, the international community had adopted two comprehensive, binding agreements relating to notification and assistance following a nuclear accident. In contrast, following the Bhopal industrial accident, which killed many more people, there has been no similar international agreement establishing an overarching framework for notification or assistance in response to industrial accidents or environmental emergencies more broadly.

The organic evolution of a patchwork of international instruments, guidance, and institutions has also experienced uneven implementation. Some institutions and frameworks have been particularly effective, while others have yet to fulfill their potential. Some of the more promising institutions to date include the Joint UNEP/OCHA Environment Unit (at the international level) and the (European) Community Mechanism (at the regional, and sometimes international, level).

The Joint UNEP/OCHA Environment Unit

The Joint UNEP/OCHA Environment Unit (JEU) is the United Nations mechanism responsible for mobilizing and coordinating international response to environmental emergencies. The JEU works with affected countries to identify and mitigate acute negative impacts stemming from emergencies. It additionally ensures the transition from the relief phase to the recovery phase by coordinating with organizations dedicated to medium- and long-term rehabilitation.

Response to environmental emergencies lies at the junction of environmental management and humanitarian response to disasters. As such, effective response draws upon both environmental and humanitarian institutions and expertise. Recognizing the need to improve international response to environmental emergencies, the United Nations Environment Programme (UNEP) and the United Nations Office for the Coordination of Humanitarian Affairs (UN OCHA), upon request of member states, established a partnership that resulted in the JEU. The JEU integrates UNEP’s technical environmental expertise into the humanitarian response coordination structure of OCHA.

At the request of the UNEP Governing Council, UNEP began the development on an experimental basis of a United Nations Centre for Urgent Environmental Assistance (UNCUEA) in 1993. The UNCUEA carried out a review of past major environmental emergencies and relevant activities of UN bodies and other international organizations. This review enabled the UNCUEA to identify gaps in existing response mechanisms. In light of these findings, States decided to transition the experimental stage of the UNCUEA into a more enduring response mechanism that would draw upon available UN resources, rather than creating a new UN organization. As a result, the Joint

Environment Unit was formally established in 1994 through an exchange of letters of understanding signed by the heads of UNEP and the UN Department of Humanitarian Affairs (DHA, the predecessor of OCHA).

This exchange of letters has some practical and political implications. It relies on the general mandates of UNEP on environmental issues and of OCHA/DHA on humanitarian emergencies. The exchange of letters between two UN bodies is an administrative arrangement, however. The JEU is not a formal international organization, and UNEP and OCHA can at their discretion dissolve the JEU. The JEU does serve the unique function of coordinating international response to a wide range of environmental emergencies, but it has no international character. Neither OCHA nor UNEP – nor the JEU which has delegated authority from OCHA and UNEP – have an explicit global mandate to respond to environmental emergencies. There is no globally applicable international agreement, or even a relevant UN General Assembly Resolution on the matter. As a result, there are potential ambiguities regarding the operational relationship between the JEU and other international institutions responding to environmental emergencies.

The JEU has a staff of approximately five individuals: the Chief, two or three professional officers, often one junior professional officer, and one secretary. Due to its lean staffing, the JEU focuses on mobilizing and coordinating international assistance for responding to environmental emergencies; the JEU also provides assistance directly. More precisely, the Joint Environment Unit responds to international environmental emergencies through coordination of international assistance, deployment of experts to identify immediate impacts and assist national authorities, and facilitation of coordination between affected countries and nations willing to donate resources. The JEU maintains, on a voluntary basis, contact points and a roster of experts that provide support in emergency response. When not responding to specific emergencies, the JEU helps countries to implement capacity-building measures.

The JEU serves as the Secretariat for the Advisory Group on Environmental Emergencies (AGEE), an international forum that brings together environmental experts and disaster managers from around the world to improve prevention, preparedness, and response to environmental emergencies. The AGEE offers the Joint Environment Unit constant feedback and helps to identify opportunities to improve response to environmental emergencies.

The JEU has responded to every environmental emergency for which it has received a request for assistance. To date, the Joint Unit has been involved in the response to more than 100 environmental emergencies. These include numerous industrial accidents, mining accidents, land slides, train accidents that spill chemicals, maritime oil spills, wildland fires, a tsunami, earthquakes, hurricanes, and a multitude of other types of emergencies.

Experience over more than a decade of operation has highlighted some limitations. The JEU often learns of emergencies through the media rather than through direct notification from affected countries. While the lack of a specific international agreement or UN General Assembly mandate on environmental emergencies enables the JEU to respond to a broad range of emergencies (often as a responder of last resort, when other institutions do not have a clear mandate), this de facto approach creates a situation where the continued successful operation of the JEU depends upon contacts cultivated on a voluntary basis. From an inter-institutional perspective, this also means that there are potential questions as to how the JEU relates to other international and regional institutions that work on issues related to environmental emergencies.

Taking Stock of Experiences to Improve Response

In order to take stock of the Joint Environment Unit's experiences, the JEU engaged Dr. Piero Calvi-Pariseti to draft a background paper on "Strengthening the International System for Environmental Emergency Response." Dr. Calvi-Pariseti identified three priority thematic areas, which the AGEE endorsed: advocacy and strengthened international response capacity; improvement of international environmental emergency governance; and operational aspects of providing and receiving international environmental emergency assistance.

In June 2007, the 7th meeting of the AGEE took place in Rosersberg, Sweden to identify lessons learned, ongoing needs, and opportunities for improving response to environmental emergencies. The AGEE endorsed Dr. Calvi-Pariseti's analysis of gaps and opportunities in international environmental emergency response. Governments and other participants agreed to

further explore measures to improve international preparedness for and response to environmental emergencies.

Under the rubric of the Rosersberg Initiative, the JEU engaged experts to analyze each thematic area and propose specific recommendations for action. This *Baseline Review* addresses Thematic Area 2: improving international environmental emergency governance. This *Baseline Review* surveys selected international and regional arrangements and, based on this survey, recommends improvements to international systems governing response to environmental emergencies. This *Baseline Review* also surveys experiences from other areas – including nuclear accidents, international search and rescue, and civil-military coordination – to identify practical models that could inform measures to improve international systems governing response to environmental emergencies. The review focuses on notification, request for assistance, and provision of assistance, as well as broader governance considerations. The box below surveys the methodology of the *Baseline Review*.

Methodology for Undertaking the *Baseline Review*

This project builds upon the paper “Strengthening the International System for Environmental Emergency Response” by Dr. Piero Calvi-Parisetti. This paper outlined a series of challenges facing international response to environmental emergencies, as well as corresponding goals that could be achieved within five years to address these obstacles. Endorsed by the AGEE, Dr. Calvi-Parisetti’s analysis served as the basis for key actions focused on in this *Baseline Review*. The *Baseline Review* looks specifically at the issues of alert, early notification, and the standardization of international response, as identified by Dr. Calvi-Parisetti.

Focusing on lessons learned from past experiences, the consultant and the Joint Environment Unit (JEU) identified case studies that could provide insight into different approaches. The consultant and the JEU then developed a template for analyzing the case studies. This template established a consistent analytic framework that facilitated comparisons across experiences and ensured that issues of primary concern were examined to the extent possible. The full-length case studies address notification and alert, request for assistance, offer of assistance, and provision of assistance. To keep the *Baseline Review* from being too long, these case studies – along with convention text, additional documentation, and citations and references for key assertions – are included in the annexes.

Due to resource limitations and the potential breadth of the case studies, the consultant and the JEU identified priority case studies. When prioritizing case studies, the consultant and the JEU sought to consider a wide range of approaches: global and regional, diverse regions and issues, and binding and non-binding approaches. Although most case studies focused on environmental emergencies, some included additional issues and others were narrower in scope while still similar enough to offer important guidance. The case studies represented different approaches, with varying effectiveness, allowing for the identification of both successes and potential challenges. The consultant and the JEU initially aimed to choose eight to ten case studies; in the end, the consultant conducted case studies on 20 international and regional frameworks, analyzed relevant provisions in 15 agreements governing international water courses, and undertook additional short case studies.

The consultant carried out the case studies through desk research, examining relevant foundational documents and third-party analyses of these approaches, where available. When necessary, the consultant supplemented desk research with interviews in order to clarify ambiguities, vet observations, and obtain additional perspectives. Whenever possible, the consultant sent drafts to the interviewees’ organizations for comment and verification.

The consultant initially conducted a few case studies to ensure that the template provided an appropriate analytic framework. Based on those analyses, the consultant made some minor revisions to the template. The consultant presented ongoing case studies and preliminary findings at the Rosersberg Initiative Working Group meeting in Tunis (December 2007), leading a one-day discussion on international governance frameworks. The meeting provided an opportunity to solicit feedback from practitioners, validate findings, find additional case studies, and receive feedback on preliminary recommendations for next steps, including additional measures and points to clarify. The participants also assisted in identifying and prioritizing actions to strengthen the governance framework.

Drawing upon the analysis of the case studies, the consultant supplemented Dr. Calvi-Parisetti’s conclusions with additional gaps and needs, and compared the experiences of individual approaches in order to identify lessons learned. Responding to identified needs and building upon lessons learned, the consultant outlined potential options for strengthening the international framework for responding to environmental emergencies.

The consultant shared the draft *Baseline Review* with the JEU at key stages throughout its development. The consultant incorporated suggestions, and a near-final version of the *Baseline Review* was circulated to key stakeholders, incorporating their feedback into the final report.

GAPS AND WEAKNESSES OF EXISTING INTERNATIONAL GOVERNANCE FRAMEWORKS

Over the past few decades, a variety of international and regional governance frameworks touching upon environmental emergencies have been developed and implemented with varying results. This *Baseline Review* analyzes these experiences and lessons learned to date, and it identifies options for addressing gaps and strengthening weaknesses in the existing frameworks.

The paper *Strengthening the International System for Environmental Emergency Response* (2007) by Dr. Piero Calvi-Pariseti, which governments and others endorsed at AGEE 7, highlighted a number of key challenges in the existing international and regional systems governing response to environmental emergencies. Research for this *Baseline Review* highlighted these challenges, and the Governments at the Tunis meeting of the Rosersberg Initiative Working Group (December 2007) reiterated the importance of addressing these key challenges. These include:

- The **lack of a comprehensive international system and procedures for notification** (including notification both to (1) a central Secretariat and (2) to other countries). Arrangements among the different governance frameworks vary considerably. For example, the IFRC Guidelines, the Oslo Guidelines, INSARAG Guidelines, and BSEC Agreement do not address notification, while the UNECE Industrial Accidents Convention, Community Mechanism, and IAEA Notification Convention place great emphasis on notification. The diversity of approaches creates a patchwork of systems for notification, without any comprehensive system.
- The **lack of a comprehensive international system and agreed upon procedures for requesting, offering, and providing international assistance in responding to environmental emergencies** (including request and offer through (1) a central Secretariat and (2) other countries).
- The **lack of specific regulations to facilitate the entry, stay, and exit/re-export of experts, equipment, and materials**.
- **Uncertainties as to what constitutes an environmental emergency** (this applies to almost all the instruments examined).
- **Uncertainties as to the obligations of the requesting country and the assisting countries**.
- **Limited formal mandate** providing for the role and responsibilities of the United Nations in mobilizing and coordinating international assistance. UN General Assembly (UNGA) Resolution 44/244 does recognize the need to strengthen international cooperation in monitoring, assessing, and anticipating environmental threats and rendering assistance in cases of environmental emergency. However, this Resolution does not provide the explicit mandate or operational details that other institutions possess for responding to environmental emergencies. UNGA Resolution 46/182 provides a general mandate for responding to disasters (see box below), but it does not address environmental emergencies specifically. Similarly, different governance frameworks – including the Community Mechanism, Tampere Convention, Oslo Guidelines, and IFRC Guidelines – acknowledge the lead role of different UN bodies in responding to environmental emergencies, but this patchwork of provisions is not an overarching official mandate and numerous gaps remain. [Notably, EU legislation does recognize that the UN has a lead role in responding to emergencies outside the Community.]

UN General Assembly Resolution 46/182 on “Strengthening the Coordination of Humanitarian Emergency Assistance of the United Nations” (19 December 1991)

UNGA Resolution 46/182 is the foundational instrument establishing the current UN framework for humanitarian assistance. Notwithstanding the fragmented character of many instruments governing response to environmental emergencies and other disasters, GA 46/182 provides an overarching framework, at least for the UN system. As a Resolution, it is not hard law. It does, however, establish a conceptual and institutional framework.

The Resolution comprises two parts: a brief resolution that grounds the resolution in previous UN resolutions, decisions, and actions and a detailed annex for strengthening coordination of UN emergency humanitarian assistance efforts.

Part I of the annex sets forth key guiding principles. These include humanity, neutrality, impartiality, respect for sovereignty, primacy of the affected State regarding control over humanitarian assistance within its territory, obligations to facilitate the work of humanitarian assistance organizations, and response efforts that support recovery and long-term development. The final principle notes the “central and unique role” of the United Nations “in providing leadership and coordinating the efforts of the international community to support the affected countries.” Parts II, III, and V focus on prevention, preparedness, and consolidated appeals, respectively.

Part IV, on stand-by capacity, sets forth mechanisms to facilitate coordinated and effective response to disasters. These include a central emergency revolving fund, development of rules and procedures for expedited response, and a central register of personnel, teams, supplies, and equipment. [The Central Emergency Revolving Fund was subsequently upgraded to the Central Emergency Response Fund by GA Resolution 50/124] It also encourages disaster-prone States to develop procedures that facilitate emergency response.

Part VI establishes an Inter-Agency Standing Committee, the Emergency Relief Coordinator (ERC), and a secretariat for the ERC. Resolution 46/182 provides a leadership role to the UN Secretary-General, which is then delegated to the ERC (and thus OCHA). It sets forth detailed responsibilities for the ERC, including processing requests, early warning, organizing needs assessments, facilitating access to emergency areas, managing the revolving fund, mobilizing relief assistance, providing consolidated information, and assisting in transitioning from relief to rehabilitation and reconstruction.

The Resolution does not address environmental emergencies, but it does provide an overarching mandate to OCHA to respond to disasters. It also establishes some basic tools and procedures for carrying out the mandate, albeit without providing much detail.

Subsequent UNGA Resolutions have focused particularly on improving cooperation and coordination in responding to disasters.

The Calvi-Parisetti paper noted – and the AGEE concurred – that these challenges resulted in part from the fact that the international regime governing responses to environmental emergencies was comparatively less developed than those regimes governing other humanitarian issues. This lack of an international regime means that there is no standardized process for providing notification, requesting assistance, providing assistance, or creating conditions otherwise conducive to addressing environmental emergencies. This, in turn, creates uncertainty and confusion, sometimes leading to unnecessary delays in response.

In addition to the challenges documented by Dr. Calvi-Parisetti, research for this *Baseline Review* has highlighted some other key challenges, including:

- A general **lack of detailed guidance** for States, international organizations, NGOs, and other institutions regarding specific procedures, standards, and arrangements for notification, request for assistance, offer of assistance, and provision of assistance in response to an environmental emergency. General provisions governing notice and assistance are common; however, detailed guidance is rare.

- There is a **lack of awareness regarding existing instruments and requirements**, which hinders their effective implementation. For example, it became evident during response to the 2004 Tsunami that many key institutions were unaware of the provisions of the Oslo Guidelines, despite heavy use of military resources as part of response; lack of awareness of the Tampere Convention also hindered movement of telecommunications equipment.
 - Few governance frameworks effectively address **coordination among organizations**. Considering the wide range of institutions with a mandate to respond to different aspects of environmental emergencies, lack of coordination can lead to confusion and inefficient use of resources, especially if an institution is protective of its mandate and prerogative. Institutional coordination – and institutional struggles over “turf” – arose during response to the 2004 Tsunami and involved UN civil-military coordination personnel deployed pursuant to the Oslo Guidelines. Coordination challenges also extend to the transition from emergency response to early recovery.
 - Most existing governance systems do not apply to **land-based sources of marine pollution**, creating a gap in mandates. For example, the IMO Conventions that govern response to marine pollution generally do not apply to land-based sources. Regional seas agreements and protocols governing land-based sources of pollution have rarely been used to address environmental emergencies. There are some governance frameworks that might apply in such instances. For example, the Community Mechanism does cover “accidental marine pollution,” which is defined in Decision No 2850/2000/EC as Recital 13: “Accidental or deliberate pollution at sea includes pollution from offshore installations and illicit operational spills from vessels.” Article 1(2)(a): “accidental marine pollution risks include releases of harmful substances into the marine environment, whatever their origin, both from ships and from the shoreline or estuaries, including those linked to the presence of dumped materials, such as munitions, but excluding authorised discharges and continuous streams of pollution originating from land-based sources[.]” The UNECE Industrial Accidents Convention may apply to land-based sources of marine pollution, as only accidents caused by “activities in the marine environment” and spills “at sea” are explicitly outside the scope. The Tampere Convention and IFRC Guidelines address “disasters,” which are broadly defined and presumably include land-based sources. Finally, the ILO Convention does not specifically exclude land-based sources. The war-time oil spill in the 2006 Lebanon-Israel conflict illustrated the patchiness of the frameworks governing response to land-based sources of marine pollution, especially during armed conflict. The international community responded, but a number of the institutions that did respond went to lengths to justify their assistance.
- The lack of a formal, comprehensive framework that focuses on the nature and effects of environmental emergencies, rather than the specific source or context of the emergency, leads to important governance gaps in responding to environmental emergencies.***
- Almost all of the existing international environmental emergency governance systems explicitly or implicitly do not apply to incidents during or arising from **war, armed conflict, terrorism, or other hostilities**. One rare exception is the MCDA Guidelines, which complement the Oslo Guidelines and address provision of assistance in situations of armed conflict. Due to the lack of governance systems applying to environmental emergencies during or arising from such contexts, there is significant uncertainty regarding mandates (who can respond, who has the lead, etc.) and procedures (how to respond).
 - Many international governance systems do not address **accidents that are severe but not necessarily transboundary**. In most instances, frameworks only apply if there are actual or potential transboundary effects.

Together, there are at least a dozen important challenges. What does this mean? Is the system broken? How is anything getting accomplished? What needs to be done to strengthen the legal, policy, and institutional frameworks governing notification and response to environmental emergencies? What *can* be done?

To start with, it must be noted that notification and assistance is happening, sometimes due to existing frameworks, sometimes in spite of existing frameworks. In many cases, institutions learn of environmental emergencies through the international press. While such informal channels are

imperfect, they can be efficient and it frequently triggers a discussion between institutions that respond to environmental emergencies and potentially affected States. Similarly, requests, offers, and provision of assistance happen both through formal channels and through informal channels. In most instances, assistance is provided ... one way or another. That is the good news.

Unfortunately, the overlaps, gaps, ambiguities, uncertainties, institutional competition for “turf”, and other challenges mean that institutions frequently must devote precious staff time to addressing these challenges, instead of focusing on the emergency at hand. These challenges reduce the efficiency and effectiveness of the institutions responding to environmental emergencies. Staff time is spent negotiating and developing means to coordinate with other institutions, rather than coordinating the use of pre-existing frameworks. Assistance is not coordinated as effectively as it could be, meaning that the wrong types of assistance are sent, too much of one type is sent, or not enough of another type of assistance is sent. Lack of awareness means that notification mechanisms – even if they exist – are not always used or there are delays while the relevant personnel try to determine how they should notify international organizations and other States.

Gaps in existing frameworks make notification and assistance less efficient, effective, standardized, and routine.

In short, the gaps and weaknesses in the existing frameworks governing response to environmental emergencies are not preventing notification or assistance, but they do make notification and assistance less efficient, effective, standardized, and routine. Improving the governance frameworks, in turn, could standardize and integrate notification and assistance procedures, making the processes more efficient and effective.

The current state and status of frameworks governing response to environmental emergencies reflects a common pattern in international law. In particular, international law and institutions tend to evolve organically and iteratively. Environmental emergency response is a relatively new field. Thus far, there have been a variety of targeted efforts, addressing different issues (oil spills, noxious substances, nuclear and radiological accidents, etc.), response tools (telecommunications, MCDA, search and rescue, etc.), and geographic contexts (river basins, marine, regional, global). Following the elaboration of these frameworks, much attention has focused on implementation. In responding to actual environmental emergencies, certain gaps and weaknesses have become clear.

On the one hand, the lack of details and frequently general provisions can create uncertainty and confusion. On the other hand, general approaches provide a flexible framework within which institutions such as the Joint Environment Unit can operate. Thus, while specificity may be lacking, the Joint Environment Unit has utilized the generality and informality of its mandate to respond to a broad range of environmental emergencies. Had their role been defined – and prescribed – clearly and precisely at the outset, a clear definition may have made it more difficult for the Unit to respond to certain environmental emergencies (e.g., that are purely internal, or radiological, or as a result from armed conflict). This is to say that a broad and general mandate can assist institutions in responding to needs that arise, even if those needs are not specifically within what might be set forth in a carefully defined mandate.

While fragmented and frequently general, the frameworks for responding to environmental emergencies clearly are still emerging and still developing, and they have yet to be consolidated. While the current international climate does not favor development of an overarching convention governing response to environmental emergencies, there are many measures that could strengthen the governance frameworks by improving coordination, addressing gaps, and providing more detail. These measures should be informed by experiences and lessons learned to date. Accordingly, a brief review of a number of existing international and regional frameworks governing response to environmental emergencies is in order, before discussing the lessons learned and options for strengthening the governance frameworks.

PROFILES OF INTERNATIONAL APPROACHES

The analysis and findings in this *Baseline Review* draw upon a series of case studies of international frameworks governing response to disasters and, to some extent, environmental emergencies. These international frameworks are diverse. Some are global, while others are regional. Some are binding, others non-binding. And some apply to environmental emergencies, others apply to disasters more broadly, yet others apply to a subset of environmental emergencies, and still others apply to disasters that are usually considered to be beyond the scope of environmental emergencies (but have relevant lessons learned for environmental emergencies). These different governance frameworks utilize a wide range of approaches, tools, and institutions.

With the diversity of approaches, there is a concomitant diversity of successes and lessons learned. Before analyzing the lessons learned, it is worth briefly reviewing the specific case studies. The full case studies are provided in Annex I. The global frameworks analyzed in this *Baseline Review* include:

- International Maritime Organization Conventions (five conventions in particular)
- The Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations
- The Oslo Guidelines on the Use of Military and Civil Defence Assets in Disaster Relief
- International Search and Rescue Advisory Group (INSARAG) Guidelines
- The (ILO) Convention concerning the Prevention of Major Industrial Accidents
- IFRC Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance
- The (IAEA) Convention on Early Notification and Convention on Assistance
- The Joint Radiation Emergency Management Plan of the International Organizations (the Joint Plan)

The regional frameworks analyzed in this *Baseline Review* include:

- The (European) Community Mechanism for Civil Protection
- The UNECE Convention on the Transboundary Effects of Industrial Accidents
- Agreement among the Governments of the Participating States of the Black Sea Economic Cooperation (BSEC) on collaboration in Emergency Assistance and Emergency Response to Natural and Man-Made Disasters, and the Protocol to the Agreement
- ASEAN Agreement on Disaster Management and Emergency Response and Agreement on Transboundary Haze Pollution
- The Coordination Center for the Prevention of Natural Disasters in Central America and the Cooperation Mechanism (CEPREDENAC)
- Various River and Lake Basin Treaties and Organizations (including provisions from 15 different frameworks)

The following table lists international and regional conventions, agreements, guidelines, and institutional arrangements that either (1) address response to environmental emergencies or (2) are from another context but may have some lessons learned that are relevant to improving international governance systems for responding to environmental emergencies.

Summary of Frameworks Governing Environmental Emergencies*
(as of August 2008)

Framework	Number of Parties	Number of Signatories**	Adopted	Entry into Force	Administered by	Scope
<i>Convention concerning the Prevention of Major Industrial Accidents</i>	13	11	June 22, 1993	Jan. 3, 1997	ILO	Global; prevention and mitigation of major industrial accidents; binding
<i>OPRC</i>	96 representing 67.00% tonnage	35	Nov. 30, 1990	May 13, 1995	IMO	Global; oil pollution preparedness and response; binding
<i>OPRC-HNS</i>	21 as 19.81% tonnage	-	March 15, 2000	June 14, 2007	IMO	Global; oil pollution and hazardous substances preparedness and response; binding
<i>MARPOL</i>	146 as 99.00% tonnage	27 countries & 2 territories	Nov. 2, 1973/78	Oct. 2, 1983	IMO	Global; sea pollution from oil and noxious substances; binding
<i>SOLAS</i>	158 as 99.04% tonnage	39 countries & 3 territories	Nov. 1, 1974	May 25, 1980	IMO	Global; minimum standards for the construction, equipment, and operation of ships; binding
<i>SAR</i>	91 as 49.84% tonnage	28 countries, 5 territories, 3 British Crown dependencies	April 27, 1979	June 22, 1985	IMO	Global; maritime search and rescue; binding
<i>Tampere Convention</i>	37	60	June 18, 1998	Jan. 8, 2005	UN OCHA	Global; provision of telecommunications resource assistance for disaster mitigation and relief; binding
<i>IAEA Notification Convention</i>	102	70	Sept. 26, 1986	Oct. 27, 1986	IAEA	Global; notification of a nuclear accident; binding
<i>IAEA Assistance Convention</i>	100	68	Sept. 26, 1986	Feb. 26, 1987	IAEA	Global; provision of assistance in the event of nuclear or radiological emergencies; binding
<i>The Joint Plan</i>	n/a	[15]	Dec. 1, 2000/ Dec. 1, 2006	n/a	IAEA	Global; coordination of international response to nuclear or radiological emergencies; non-binding
<i>INSARAG Guidelines</i>	n/a	n/a	Dec. 2002/ July 2006/Jan. 2007	n/a	UN OCHA	Global; disaster search and rescue and response; non-binding
<i>Framework Convention on Civil Defence Assistance</i>	13	21	May 22, 2000	Sept. 23, 2001	ICDO	Global; cooperation between civil defense services; binding
<i>Oslo Guidelines</i>	n/a	n/a	May 1994	n/a	UN OCHA	Global; the use of military and civil defense assets in disaster relief; non-binding

* Frameworks for which the consultants have done case studies are *designated by italicized text*.

** For non-binding frameworks, the number of involved countries or institutions is designated by [#], where such information is readily available.

Framework	Number of Parties	Number of Signatories**	Adopted	Entry into Force	Administered by	Scope
Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters	10	10	July 1999	Nov. 1, 2000	ESA and CNES	Improvement of the use of space technologies and facilities for the management of and response to environmental or technological emergencies; binding
Sphere Project Humanitarian Charter and Minimum Standards in Disaster Response	n/a	n/a	2004	n/a	IFRC (hosted)	Global; framework for accountability in disaster assistance measures; non-binding
UNITAR Model Rules for Disaster Relief Operations	n/a	n/a	1982	n/a	UNITAR	Global; guidelines for disaster assistance akin to guidelines for the law of armed conflict; non-binding
<i>Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance</i>	n/a	n/a	Nov. 28, 2007	n/a	IFRC	Global; improvement of domestic legal, policy, and institutional frameworks to facilitate international disaster assistance; non-binding
Code of Conduct for the International Red Cross and Red Crescent Movement and NGOs in Disaster Relief	n/a	447 institutions	Dec. 31, 1994	n/a	IFRC	Global; set of professional standards for disaster-relief agencies to follow in their operations; nonbinding
<i>Agreement on Collaboration in Emergency Assistance and Response to Natural and Man-made Disasters</i>	8	8	Apr. 15, 1998	Mar. 11, 2003	BSEC	Regional; response to natural or man-made disasters in the Black Sea region; binding
<i>Additional Protocol to BSEC Agreement</i>	9	10	Oct. 20, 2005	July 5, 2007	BSEC	Regional; establishes Network of Liaison Officers on Emergency Assistance; binding
<i>UNECE Convention on the Transboundary Effects of Industrial Accidents</i>	37	27	Mar. 17, 1992	Apr. 19, 2000	UNECE	Regional; alert and mutual assistance for land based, civilian, non-nuclear industrial accidents; binding
<i>Community Civil Protection Mechanism</i>	30	n/a	Oct. 23, 2001	Jan. 1, 2002	European Commission	Regional; alert and provision of assistance for natural, technological, radiological or environmental accidents; binding

* Frameworks for which the consultants have done case studies are *designated by italicized text*.

** For non-binding frameworks, the number of involved countries or institutions is designated by [#], where such information is readily available.

Framework	Number of Parties	Number of Signatories**	Adopted	Entry into Force	Administered by	Scope
Directive 96/82/EC ("Seveso II Directive") on the control of major-accident hazards involving dangerous substances, as amended by Directive 2003/105/EC of the European Parliament and of the Council	27	n/a	Dec. 9, 1996/ Dec. 16, 2003	Feb. 3, 1997 (Seveso II Directive)/ Sept. 21, 2005 (Directive 2003/105/EC)	EU	Regional; prevention of major chemical accidents and mitigation of their consequences; binding
Inter-American Convention to Facilitate Disaster Assistance	3	4	June 7, 1991	Oct. 16, 1996	OAS	Regional; establishment of National Coordinating Authorities and disaster assistance procedures; binding
<i>CEPREDENAC Cooperation Mechanism</i>	8	8	Oct. 19, 1999	n/a	CEPREDENAC	Regional; alert and provision of humanitarian assistance for disaster response; non-binding
ASEAN Agreement on Disaster Management and Emergency Response		10	July 26, 2005	n/a	ASEAN	Regional; mechanism for disaster response through regional and international cooperation as well as through national efforts; binding
ASEAN Agreement on Transboundary Haze Pollution	8	10	June 10, 2002	Nov. 25, 2003	ASEAN	Regional; coordinated prevention, preparedness, and response to transboundary haze pollution from land and forest fires; binding
<i>River Basin Agreements (various)</i>	Varying	Varying	Varying	Varying	Varying	At least 13 binding basin agreements have provisions relating to environmental emergencies, as well as the SADC protocol (non-binding) and Helsinki Convention (binding)

* Frameworks for which the consultants have done case studies are *designated by italicized text*.

** For non-binding frameworks, the number of involved countries or institutions is designated by [#], where such information is readily available.

Additional Institutions

The above list accounts for those organizations that administer frameworks; there are still others that work and have worked on the policy and operational aspects of environmental emergencies. Representative of such institutions is the Global Fire Monitoring Center (GFMC), hosted by the Fire Ecology Research Group at the Max Planck Institute for Chemistry, Germany. The GFMC is developing environmental emergency response instruments and mechanisms such as an International Wildland Fire Accord. The GFMC is serving as Secretariat of the United Nations International Strategy for Disaster Reduction (UNISDR) Global Wildland Fire Network and the Wildland Fire Advisory Group. The long-term goal of the Global Wildland Fire Network is the development of an International Wildland Fire Accord, which could be either voluntary or binding. The Accord would be based on the rationale that the protection of global vegetation cover against degradation or destruction by wildfires or excessive application of fire in land-use change will contribute to disaster risk reduction (smoke pollution affecting human health and security, release of greenhouse gases, secondary disasters such as landslides, erosion, and floods, as well as threats to biodiversity) and securing livelihoods of people living in or downstream of fire-prone lands, or at the wildland-urban interface. In preparation of the process, the international community cooperating under the umbrella of the Global Wildland Fire Network and supported by UN agencies and programs, has developed a number of tools, templates, and models for improving governance, efficiency, and effectiveness of international cooperation in wildfire disaster risk reduction, management, and response. These include:

- International wildland fire terminology;
- Wildland fire risk identification by providing national, regional, and global fire assessments;
- Fire and smoke management non-binding guidelines; dedicated ecozonal fire management guidelines;
- Use of the Incident Command System (ISC) as a common wildland fire incident management system for international cooperation in a disaster situation;
- Template for international wildland fire management cooperation agreements for the use by countries interested in entering into formal relationships and agreements on reciprocal assistance with other countries facing similar issues; and
- Training in fire disaster management, including establishment of internationally compatible standards and competency and certification of international fire responders.

The GFMC is working closely with AGEE / Rosersberg Initiative and offering the development of a dedicated training element for fire responders with the pilot training module. The development of guidelines following the INSARAG format is envisaged.

Another relevant organization is the Max Planck Institute for Comparative Public Law and International Law, which produced a set of *International Guidelines for Humanitarian Assistance Operations* (1991). In its 2005 IDRL Survey, the IFRC additionally cites the “Draft Model Agreement Relating to Humanitarian Relief Actions” (International Law Association, 1982) and “Recommendations of the Customs Co-operation Council to expedite the forwarding of relief consignments in the event of disasters (T2-423, 1970) as potentially useful instruments for organizations responding to disasters.

The NATO Euro-Atlantic Disaster Response Coordination Centre (EADRCC) has guided response efforts in more than 25 disaster scenarios, accumulating regional experience responding to environmental emergencies such as the October 2005 earthquake in Pakistan and Hurricane Katrina of the same year in the United States. While EADRCC does not administer any particular framework, it is a resource for responding to disasters (for more information, see the summary in Annex II). The World Health Organization also has extensive experience responding to health emergencies, in areas including notification, requesting assistance, and provision of assistance. Many of the emergencies to which the WHO responds arise from earthquakes, hurricanes, and other disasters which may also create environmental emergencies.

Selection of Frameworks

The global and regional frameworks profiled in this *Baseline Review* were selected from among the broader set of frameworks summarized in this table. Due to financial and time limitations, it was not possible to undertake a full review of each experience. The consultant and the JEU selected a set of case studies in order to compare and contrast different experiences that could thereby inform options for strengthening the international framework governing response to environmental emergencies.

Accordingly, the case studies include a range of different levels (global, regional), geographic areas (Europe, Central America, Southeast Asia, Central Asia, and numerous other areas with international water bodies), response approaches (including search and rescue, communications, civil-military assistance), related experiences that are not explicitly applicable to environmental emergencies but could be relevant (such as nuclear accidents and radiological emergencies), approaches that are broader than environmental emergencies (such as natural disasters), binding and non-binding approaches, UN and other international institutions, effective and ineffective (focusing particularly on the reasons for the degree of effectiveness), and so forth.

Questions or comments regarding the selection of the case studies are welcome and should be addressed to the individuals mentioned in the Acknowledgments.

The individual experiences are herewith summarized briefly. More detailed analyses are included in the Annexes, and the findings from these analyses are referenced throughout the text of this *Baseline Review*.

INTERNATIONAL MARITIME ORGANIZATION (IMO) CONVENTIONS

Established in 1948, the IMO is a specialized agency of the United Nations, consisting of 167 Member States and 3 Associate Members. The IMO's primary tasks are to ensure the safety of lives at sea and to protect the marine environment from pollution. The IMO carries out these tasks by developing and maintaining a regulatory framework for shipping that addresses safety, technical cooperation, and environmental concerns.

The IMO administers more than 40 conventions addressing various marine issues, several of which contain measures to prevent and respond to accidents. The IMO's governance system for oil spills is particularly relevant to environmental emergency response. The 1990 International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) is the primary IMO instrument governing response to environmental emergencies, with others addressing different aspects of environmental emergencies. OPRC addresses notification of Parties, request for assistance, and the national and regional systems that must be established in order to respond effectively to an oil pollution incident.

Under OPRC, a wide range of persons are obliged to report the presence of oil to the nearest coastal State or to the coastal State with jurisdiction over the offshore unit. When a Party receives a report regarding an oil spill, it must: assess the nature, extent, and possible consequences of the incident; and inform all affected or potentially affected States of the incident, the details of its assessment, and actions taken to mitigate the incident's effects. The Party must also update affected and potentially affected States. While Parties are encouraged to notify the IMO of oil pollution accidents, it is not obligatory. Each Party must set up a national system for oil pollution preparedness and response that includes designated competent authorities and national operational contact points, as well as a national contingency plan for preparedness and response. Each Party must facilitate the entry and exit of ships, aircraft, personnel, equipment, and materials involved in responding.

Four other IMO conventions address prevention of and response to accidents. The 2000 Protocol on Preparedness, Response and Co-operation to Pollution Incidents by Hazardous and Noxious Substances (OPRC-HNS) extends the OPRC framework to include marine pollution incidents involving hazardous and noxious substances. In order to ensure merchant ship safety, the 1974 International Convention for the Safety of Life at Sea (SOLAS) Convention specifies minimum standards for the construction, equipment, and operation of ships. The 1973/78 International Convention for the Prevention of Pollution from Ships (MARPOL) regulates sea pollution from oil, noxious liquid substances, harmful packaged substances, sewage, garbage, and air pollution. The 1979 International Convention on Maritime Search and Rescue (SAR) establishes an international system for maritime search and rescue.

The IMO conventions share many innovative provisions that could inform efforts to strengthen international frameworks governing response to environmental emergencies. OPRC, OPRC-HNS, and SAR all reduce legal and administrative hindrances during emergencies, enabling faster movement of response ships, personnel, equipment, and materials into and out of territorial waters. Additionally, most of the IMO conventions examined include provisions for their continual improvement through assessment, refinement, and amendment. One drawback is that there are some uncertainties regarding potential application of IMO conventions to pollution from land-based activities or to emergencies arising from armed conflict.

THE TAMPERE CONVENTION

Communications technology and its applications for emergency telecommunications play an essential role in disaster response. The Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations establishes a broad framework for cooperation among States Party and non-state actors with regard to provision of telecommunication assistance for disaster mitigation and relief. The Convention was adopted in 1998 and entered into force in 2005. As of February 2008, there were 60 signatories and 37 States Party to the Convention. The Convention establishes procedures for the request, provision, conditioning, payment or reimbursement, and termination of telecommunication assistance. The Convention applies to disasters that pose a significant threat to the environment, whether arising suddenly or as a result of a long-term process.

The Convention provides detailed procedures for requests and offers of assistance, while not addressing notification. The UN Emergency Relief Coordinator (ERC) has a central role (the “operational coordinator”) as an intermediary between affected and assisting Parties. Parties may also make requests and offers directly to each other. The ERC also acts as an information clearing house, responsible for maintaining a Telecommunication Assistance Information Inventory, which consists of data on telecommunication resources supplied by Parties and non-State actors that could be made available to facilitate disaster relief and mitigation.

While the Tampere Convention only concerns telecommunication resources, many of the provisions regarding request for and provision of assistance could inform efforts to improve international systems for responding to environmental emergencies. For example, the Convention provides for the removal and reduction “when possible” of regulatory barriers that hinder the entry and/or use of telecommunications resources in disaster-affected areas. Parties may undertake a range of measures to remove these regulatory barriers, including but not limited to: revising regulations; exempting specified resources from application of relevant regulations; pre-clearance of telecommunication resources; and expedited review or temporary waivers of regulations. Each State Party must also eliminate impediments at its borders by facilitating transfer of personnel and materials

The Tampere Convention requires Parties to remove regulatory barriers to import, transit, and export of personnel, equipment, and other telecommunications resources to respond to a disaster.

essential to provision of assistance into, out of, and through its territory. Equipment, materials, and other property brought into or purchased in the requesting State for assistance purposes are exempt from taxation, duties, and other charges and are immune from seizure, attachment, or requisition. The Convention also grants certain privileges and immunities to persons and organizations engaged in providing assistance pursuant to the Convention, including immunity from arrest, detention, and legal process.

It is unclear to what extent States Party to the Tampere Convention have undertaken measures to reduce regulatory barriers and otherwise enabled assistance pursuant to the Convention. For example, some reports following the 2004 Indian Ocean tsunami noted problems that a State Party experienced regarding the processing of radio equipment through customs as well as difficulties for smaller organizations in paying taxes and duties on relief goods – all of which were exempted under the Convention. Similarly, it is uncertain whether and to what extent States Party have engaged in exchange of information through the Telecommunication Assistance Information Inventory, as provided for in the Convention.

THE OSLO GUIDELINES ON THE USE OF MILITARY AND CIVIL DEFENCE ASSETS IN DISASTER RELIEF

The Oslo Guidelines were released in 1994 following a collaborative process that involved the UN, States, and major NGOs; it was re-launched in 2006 and finalized in 2007 to reflect current terminology and organizational changes. The Guidelines seek to establish the basic framework governing the use of foreign military assets in international disaster relief operations in times of peace. The use of military assets during armed conflict and peacekeeping is outside the scope of the Guidelines. The Guidelines apply to disaster response operations following “natural, technological, and environmental” emergencies. The Guidelines are grounded in the principle that military assets should complement civilian relief mechanisms, as a *last resort* in situations where civilian alternatives are unavailable and only the use of military assets can meet a critical humanitarian need.

The Guidelines distinguish between military and civil defence assets under UN control (UN MCDA) and “other deployed forces” which may partake in relief activities but remain under military control. In principle, UN MCDA should remain unarmed, under civilian control, and should focus on indirect assistance and infrastructure support missions.

The Guidelines focus on request for and provision of assistance; notification and alert are outside the scope of the Guidelines. States may request assistance through OCHA’s Civil Military Coordination Section (CMCS), which matches requests with available resources through its Directory of MCDA, an online database of information provided by States regarding military assets that can be made available for use in disaster relief operations. CMCS can also make available trained civil-military liaison personnel to UN agencies and other actors participating in response operations. Affected States should ensure the removal of border impediments and regulatory hurdles to the effective deployment of military assets by providing for: overflight and landing permission; waiver of commercial documentation; exemption from customs duties; waiver of visa requirements; free access to disaster zones; authorization of transport and communication usage; and security for military assistance.

Several features of the Oslo Guidelines could inform efforts to strengthen international response to environmental emergencies. One innovative feature of the Guidelines is the Model Agreement, a related instrument contained in a separate Annex of the Guidelines. This agreement serves as a potential basis for drafting binding mutual agreements between States. The Model Agreement lays out several measures for affected States to undertake to facilitate and accommodate military assistance, including the removal of customs restrictions and fees on relief goods; rights of entry, stay, and movement for assistance personnel; and freedom of movement within the disaster zone.

The Guidelines and related Model Agreement recognize that sole reliance on civilian resources may not address all the needs of disaster response. By insisting on the use of military assets only as a last resort, the Guidelines sacrifice a degree of flexibility, since situations may arise in the course of assistance operations where requesting military assistance is more expedient and effective than seeking a civilian alternative. Indeed, experience to date suggests that military assistance frequently is an early source of support for disaster response, and not a last resort. Another challenge in implementation of the Guidelines is limited awareness and familiarity. For example, several commentators have observed that insufficient awareness of the Guidelines hindered response to the 2004 Indian Ocean tsunami, which relied heavily on military resources.

THE ILO CONVENTION CONCERNING THE PREVENTION OF MAJOR INDUSTRIAL ACCIDENTS

The General Conference of the International Labour Organization (ILO) adopted the Convention Concerning the Prevention of Major Industrial Accidents in 1993 to promote “prevention of major accidents involving hazardous substances and the limitation of the consequences of such accidents.” As of February 2008, 11 States had ratified the Convention, which is open for ratification by any ILO Member State. The Convention entered into force in 1997, after ratification by two ILO Member States.

The Convention applies to “major hazard installations,” which is defined as any installation which “produces, processes, handles, uses, disposes of or stores” one or more hazardous substances in quantities exceeding the threshold quantity. The substances and threshold quantities are defined in accordance with the laws of each Member State. For purposes of the Convention, a major accident means a “sudden occurrence” within a major hazard installation, involving one or more hazardous substances, which poses “a serious danger to workers, the public or the environment, whether immediate or delayed.”

The Convention makes national authorities, facilities, and workers responsible for mitigation of accident effects. A facility must inform the competent national authority “as soon as a major accident occurs.” The competent authority must ensure that “warning is given as soon as possible in the case of a major accident.” Moreover, if an accident could have transboundary effects, the competent authority must provide both warning and information on safety measures “to the States concerned.” Workers must receive regular instruction and training in, among other areas, emergency procedures to be followed in the event of a major accident. The Convention does not specify the means of transmission or details required in such warnings.

The Convention does not explicitly address requests for and provision of assistance in the event of an accident. Employers are obliged to establish on-site emergency plans, including (1) measures to limit the consequences of an accident; (2) emergency medical procedures; and (3) measures to share information about potential accidents and on-site emergency plans with outside authorities that are responsible for protecting the public and the environment outside the confines of the facility. A State’s competent authorities are responsible for implementing off-site emergency plans and procedures to protect the public and the environment, including plans to disseminate information to the public regarding what to do in case of a major accident.

Some features of the Convention can inform improvements in international response to environmental emergencies. Responsibility for warning and mitigation is shared by actors from the level of an industrial installation up to the national authorities. Both facility owners and national authorities must have detailed emergency plans in place to mitigate the effects of a potential accident. The Convention does not, however, specify procedures for request and provision of mutual assistance, which may be necessary if a State lacks the resources to effectively respond to a major accident on its own.

INTERNATIONAL SEARCH AND RESCUE ADVISORY GROUP (INSARAG) GUIDELINES

In 1988, an earthquake devastated Armenia. Subsequently, the International Search and Rescue Advisory Group (INSARAG) was established in 1991 to develop a methodology for international coordination in disaster response and a set of standards for international urban search and rescue teams. INSARAG is now a global network composed of more than 80 countries and disaster response organizations. It published the first version of the INSARAG Guidelines in the late 1990s to improve urban search and rescue (USAR) efforts. The INSARAG Guidelines serve as an adaptable, non-binding document that provides capacity-building guidance to disaster-prone countries, offers basic requirements for urban search and rescue teams involved in international response operations, and outlines coordination procedures for both international and national responders in major disasters. Updated in May 2007, the Guidelines are assessed and usually revised at a yearly meeting. The UNGA endorsed the Guidelines as a tool for preparing for and responding to disasters.

The Guidelines suggest that an affected country conduct an immediate assessment of the situation and prioritize its needs. The affected country should convey its needs and provide regular situation updates through the Virtual On-Site Operations Coordination Centre (OSOCC), a web-based management tool administered by OCHA that facilitates information exchange between the affected country and assisting countries and teams. A responding country or search and rescue team should enter the assistance it intends to offer via the Virtual OSOCC as well. In order to enable efficient provision of assistance, both the affected country and international USAR teams should take specific measures to facilitate the entry and exit of emergency response personnel, equipment, and materials.

The Guidelines recognize that responsibility for coordinating emergency operations lies with the affected country. The Guidelines also vest OCHA with the responsibility to act as INSARAG Secretariat, to manage the Virtual OSOCC, and to review post-mission reports in order to incorporate lessons learned into subsequent iterations of the Guidelines.

Although the INSARAG Guidelines seek to establish a methodology for international coordination in disaster response, its innovative provisions regarding request for and provision of assistance could aid in strengthening international response to environmental emergencies. Through the establishment of the Virtual OSOCC, the Guidelines standardize procedures for requesting assistance and allow for efficient allocation of available resources. The different levels of USAR team certification seek to ensure quality assistance for USAR teams specializing in light, medium, and heavy assistance. Through both preparedness measures and expedited immigration and customs requirements, the Guidelines facilitate the entry and exit of resources for assistance. In addition, the Guidelines outline the respective responsibilities of the affected country and those providing assistance. Moreover, stock-taking and periodic updating of the Guidelines facilitate learning from experience.

The non-binding nature of the Guidelines has benefits and disadvantages. The non-binding nature allows for additional detail and international agreement, where a binding instrument would likely be more vague and restrictive. It also enables international practice to grow around the Guidelines, testing what works well and what does not. At the same time, the non-binding nature means that not all countries follow the Guidelines and search and rescue capacity varies considerably among countries. Some disaster-prone countries need more education on the international resources available, what resources they need to control and mitigate disaster effects, and how they can better manage and coordinate assistance.

IFRC GUIDELINES FOR THE DOMESTIC FACILITATION AND REGULATION OF INTERNATIONAL DISASTER RELIEF AND INITIAL RECOVERY ASSISTANCE

The Guidelines for the Domestic Facilitation and Regulation of International Disaster Relief and Initial Recovery Assistance were officially adopted in November 2007 at the 30th International Conference of the Red Cross and Red Crescent. The Guidelines seek to enhance national disaster preparedness by providing guidance to States on how to improve their domestic legal, policy, and institutional frameworks concerning international disaster relief and initial recovery assistance. The Guidelines are applicable to both natural and man-made disasters, including those which affect the environment, whether arising suddenly or developing over time. The Guidelines are nonbinding, not intended to modify international law or existing agreements, and not applicable to situations of armed conflict.

The Guidelines define the roles of several actors that may provide assistance, including affected, assisting, transit, and originating States, as well as assisting humanitarian organizations (which may be intergovernmental or nongovernmental). Early warning and notification of environmental emergencies, offers of assistance, and requests for assistance are not addressed in detail.

Pursuant to the Guidelines, eligible assisting actors are entitled to a series of legal and regulatory arrangements to facilitate provision of assistance. Affected States should expedite provision of necessary documents such as visas and work permits for assistance personnel, grant such personnel temporary domestic legal status, and recognize foreign professional qualifications such as driver's licenses. Assisting personnel should be granted freedom of movement about the disaster-affected area. Relief goods and equipment should be exempted from customs duties, tariffs, taxes, and other fees. Other provisions aim to minimize delay in timely provision of goods and equipment. Documentation requirements for export, transit, or import should be simplified and minimized; and inspections requirements should be waived or reduced. All State actors should allow for the passage of land, marine, and air vehicles operated by assisting actors for the purpose of transporting disaster assistance. Military assets should be made available only in the absence of comparable civilian alternatives.

Many of the Guidelines' provisions regarding provision of assistance could inform efforts to improve international response to environmental emergencies. The Guidelines are notable for their focus on the removal and reduction of legal and regulatory barriers to the effective provision of assistance in a variety of areas such as entry, stay, and exit of personnel; customs controls; taxation; and transport. An innovative feature of the Guidelines is the inclusion of provisions concerning "special goods and equipment," a category comprising vehicles, medical assistance, and telecommunications and information technology equipment. This feature recognizes that some categories of assistance are particularly important to any disaster relief operation, and, accordingly, addresses in greater detail how all actors should treat such resources. However, the Guidelines in their current form do not substantively address notification (e.g., which actors should be notified, timeframe for notification), procedures for requesting international assistance, and coordination of offers of assistance. The Guidelines are also notable in their breadth of application across ostensibly all disasters except for those associated with armed conflict, as well as its application to States, international organizations, and NGOs. The non-binding nature of the Guidelines enables the IFRC and Member States to adopt more detailed and expansive provisions than may otherwise have been possible through a binding convention. As such, the Guidelines can help to support the development of national practice, albeit in a voluntary manner.

THE IAEA CONVENTIONS ON EARLY NOTIFICATION AND ON ASSISTANCE

In April 1986, a reactor at the Chernobyl nuclear power plant exploded in Ukraine, releasing radioactive material into the atmosphere over an extensive area. While international negotiations for a convention addressing nuclear accidents and radiological emergencies had been moving slowly for many years until then, the severe, widespread, and transboundary effects of the Chernobyl nuclear accident focused public attention and compelled the international community to develop systems for notification and provision of assistance in the event of nuclear accidents. Within five months of the Chernobyl accident, the international community concluded negotiations on the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. Both conventions entered into force within five months of their adoption. Administered by the International Atomic Energy Agency (IAEA), the Convention on Early Notification establishes requirements and procedures for notification of a nuclear accident, and the Convention on Assistance prescribes a framework to facilitate quick and effective international assistance in the event of a nuclear accident or radiological emergency.

Under the Convention on Early Notification, an affected State Party that suffers a nuclear accident must notify other affected or potentially affected States. The affected State can provide notification through two different procedures: (1) by directly notifying both the IAEA and affected or potentially affected States, or (2) by notifying only the IAEA, which will then notify affected or potentially affected States and relevant international organizations. The Convention on Early Notification also outlines the information that an affected State must include in the initial notification and requires the affected State to provide additional information at appropriate intervals as the situation develops. The IAEA also must update, upon request, any State Party, Member State, or international organization.

While neither convention compels Parties to request assistance, the Convention on Assistance provides that a State may request assistance from any other State Party, from the IAEA, or from any appropriate international organization. Under this convention, Parties can respond to requests for assistance either by directly contacting the requesting State or by contacting the IAEA, which will relay the response to the requesting State. Although the IAEA plays an active role in the overall coordination of international assistance, the requesting State is primarily responsible for coordinating assistance within its territory. The requesting State must offer its local facilities to assisting Parties; protect personnel, equipment, and materials brought into its territory; and facilitate entry and exit of assistance.

These conventions seek to establish a procedure for notification and response in the event of nuclear or radiological accidents, and not environmental emergencies per se. Nevertheless, the lessons learned and innovative provisions could inform the strengthening of governance systems for environmental emergencies. Both conventions benefit from their administration by the IAEA, a high-profile international organization that can provide sufficient resources and political support to implement the agreements effectively. The IAEA plays a central role in collecting and disseminating information and coordinating assistance. Both conventions articulate clear, flexible procedures that Parties must follow. Despite these strengths, both conventions may not apply during or as a result of war, armed conflict, terrorism, or other hostilities. There are also questions regarding how provisions apply between countries with strained relations. In addition, there are uncertainties in the scope of both conventions, particularly regarding non-transboundary emergencies and facilities and activities associated with nuclear weapons or nuclear weapon tests.

THE JOINT RADIATION EMERGENCY MANAGEMENT PLAN OF THE INTERNATIONAL ORGANIZATIONS (THE JOINT PLAN)

More than a dozen international organizations have responsibility – often overlapping – for preparing for, providing assistance to, and sharing information on nuclear and radiological emergencies. Recognizing the need to improve coordination among these organizations, IAEA coordinated the development of the first Joint Radiation Emergency Management Plan of the International Organizations (the Joint Plan) in 2000. Since its inception, the Joint Plan has been reviewed every two years by a committee composed of representatives from participating organizations. Updated in 2006, another revision of the plan is forthcoming in 2009. Initially, 6 organizations were involved; now, 15 participate.

The Joint Plan creates an inter-agency framework for coordinating preparedness and response. The Joint Plan provides a common understanding of emergency response objectives, outlines the respective roles and responsibilities of each participating international organization at different phases and in different contexts, and presents an overall arrangement for coordination among the organizations. The Joint Plan's emergency response section articulates detailed provisions on responsibilities of international organizations, coordination among participating organizations, initial notification or advisory messages, prepared responses to each type of emergency, means of communication, provision of advice and assistance, and post-emergency follow-up. The plan's section on emergency preparedness describes preparedness training and exercises, as well as the Joint Plan review process. Ultimately, the Joint Plan provides guidance for the overall coordination of international response to nuclear and radiological emergencies.

The Joint Plan offers a common system of operations that outlines the way that participating organizations' respective resources should be coordinated in response to a specific situation. The Joint Plan places ultimate responsibility on States. Building upon this primary national responsibility, the Joint Plan also vests the IAEA with the responsibility to coordinate international response to nuclear and radiological emergencies. In addition, the Joint Plan recognizes the role of OCHA in coordinating humanitarian response. The specific involvement of participating international organizations in emergency response depends on factors such as the nature and extent of the particular emergency.

The Joint Plan offers an innovative and detailed approach to the coordination of emergency response among international organizations. The framework established and iteratively updated in the Joint Plan outlines the particular responsibilities of each participating international organization. It also provides an overall structure describing how these organizations should work together in emergency response. In addition to providing an overall framework for emergency response, the Joint Plan includes classifications of potential types of emergencies. Each of these classifications contains a detailed description of the type of emergency, and a "concept of operations" specific to the type of emergency. Each concept of operations outlines the way that assistance should be coordinated among organizations for a particular type of emergency. The Joint Plan's comprehensive system for emergency response also differentiates between provision of advice and provision of assistance. By first assessing the situation and offering advice, and then developing an assistance action plan based on this assessment, the participating organizations of the Joint Plan maximize the efficient use of available resources. The Joint Plan's innovative inclusion of a less formal advisory message allows other States and participating international organizations to be better prepared to respond to an emergency by providing advanced warning of a situation.

THE COMMUNITY CIVIL PROTECTION MECHANISM

The (European) Community Civil Protection Mechanism is an initiative of the European Community, created through a 2001 Decision of the Council of the European Union (revised in 2007) and implementing rules adopted by the European Commission Decisions in 2003. All 27 EU Member States participate in the Mechanism along with Norway, Iceland, and Liechtenstein, for a total of 30 participating States (as of February 2008). The Mechanism governs provision of assistance in case of major emergencies, which are defined as “natural, technological, radiological or environmental accidents” as well as “accidental marine pollution.” The Mechanism covers notification, assistance, and preparedness. States that are not participants in the Mechanism may request assistance through the Mechanism in the event of an emergency.

The centerpiece of the Mechanism is the Monitoring and Information Centre (MIC), a 24-hour communications hub responsible for coordinating notifications and requests for assistance. The MIC is responsible for transmitting alerts that it receives to all participating States. The Mechanism’s common emergency communication and information system (CECIS) is a secure system to facilitate and standardize communications and information sharing between the MIC and the contact points of the participating States. Assistance under the Mechanism is provided by dispatching “intervention teams” that are specially tailored to the particular type of emergency and the needs of a particular emergency, as well as teams of experts comprising both technical experts and assessment experts. If the MIC receives a request for experts, it consults an expert database established by the Mechanism and available via CECIS, and then enquires with the participating States about the availability of experts ready to leave within 3 hours following their designation. For assistance interventions in non-Member States, the Commission must work in close cooperation with the State that currently holds the Presidency of the Council of the European Union.

The MIC has a mandate to collect “essential information on early warnings” and distribute it to all the participating States’ competent civil protection authorities and/or their contact points. The affected State must regularly update the MIC on the latest developments if any risks for transboundary consequences appear. The MIC, in turn, informs the other participating States of developments. To accommodate the incoming assistance, the requesting State is required to facilitate border crossings for assistance teams and to ensure logistical support.

Several features of the Mechanism can inform improvements in international response to environmental emergencies. The main innovative feature of the Mechanism is the MIC, which centralizes notification and assistance coordination functions, ensuring that affected States need only coordinate assistance offers with a single contact point. Since the Mechanism is a voluntary instrument, there have been concerns that gaps may arise between the needs of an emergency and the resources offered as assistance.

THE UNECE CONVENTION ON THE TRANSBOUNDARY EFFECTS OF INDUSTRIAL ACCIDENTS

The United Nations Economic Commission for Europe (UNECE) Convention on the Transboundary Effects of Industrial Accidents seeks to protect people and the environment by instituting measures to prevent, prepare for, and respond to industrial accidents. The Convention was adopted in 1992 and entered into force in 2000. As of February 2008, there are 37 Parties to the Convention, including 36 UNECE Member States and the European Community. The Convention is limited to land-based industrial accidents, and includes seven classes of accidents that are explicitly exempted. The Convention requires Parties to undertake preparedness measures, including detailed contingency plans; provides for a multinational system of notification and assistance request in the event of an industrial accident; and provides for long-term cooperation in areas such as research and development, as well as technology transfer. The UNECE administers the Convention, while the Conference of the Parties (COP) is the formal governing body.

In the event of an industrial accident, notification, offers of assistance, and assistance requests are all done through the UNECE Industrial Accident Notification System (IAN). Three types of reports – Early Warning, Information, and Assistance – are standardized in form and content for transmission through IAN. The system consists of a network of contact points among the Parties. These contact points must transmit all reports by email or fax and must acknowledge receipt via fax or telephone.

The Convention requires the requesting Party to facilitate the “entry into, stay in and departure from its national territory” of personnel, equipment, and property involved in the assistance, but does not specify the means by which Parties satisfy this provision. Both assisting and requesting Parties must facilitate the transit of personnel and other assistance resources through their territories.

The Convention only governs response to industrial accidents, but many of its provisions could inform efforts to improve international response to a broader range of environmental emergencies. Notably, notification and assistance requests are transmitted through the unified IAN system. This arrangement reduces the potential for miscommunication and other delays by standardizing the content of reports, means of transmission, and language for communication. All assistance requests, for instance, must indicate the type of response team being requested (e.g., fire, hazmat, search and rescue), the nature of assistance being requested (e.g., sampling and analysis, cleanup/restoration, humanitarian), logistics information, and emergency and mitigation measures already taken. Moreover, the IAN system undergoes periodic testing to determine whether all points of contact are properly functioning.

Another innovation of the Industrial Accidents Convention is the Assistance Programme, initiated by the COP. This initiative seeks to ensure full implementation of the Convention’s provisions among Parties that have limited human or financial capacity for responding to industrial accidents. The Programme assists States through: capacity building activities such as workshops, training sessions, and exchange programs; technical advisory services for emergency preparedness and response, particularly in areas of need identified by fact-finding missions; and establishment of transboundary pilot projects and joint exercises.

***AGREEMENT AMONG THE GOVERNMENTS OF THE PARTICIPATING STATES OF
THE BLACK SEA ECONOMIC COOPERATION (BSEC) ON COLLABORATION IN
EMERGENCY ASSISTANCE AND EMERGENCY RESPONSE TO NATURAL AND
MAN-MADE DISASTERS***

The Black Sea Economic Cooperation (BSEC) fosters political and economic cooperation among its 12 Member States. The BSEC administers a 1998 Agreement among the BSEC Participating States on Collaboration in Emergency Assistance and Emergency Response to Natural and Man-made Disasters. This binding agreement establishes a framework for response coordination in the Black Sea region in the event of actual and potential disasters, whether of natural or man-made origin. In order to enhance implementation of the Agreement, the BSEC developed the 2005 Additional Protocol, which seeks to strengthen communication among Parties through the establishment of the BSEC Network of Liaison Officers on Emergency Assistance.

Under the Agreement, if a Party finds that its own disaster response forces are overwhelmed by a particular disaster, it can request assistance from other Parties by forwarding a national appeal. In this appeal, the requesting Party must provide details on the disaster, mitigation actions that have already been taken, and prioritized needs. The requesting Party must also update this information as the situation develops. Parties to the Additional Protocol must appoint liaison officers, who are responsible for forwarding these requests to their respective counterparts.

An assisting Party must outline the amount of assistance it intends to provide and its conditions for provision of assistance. Assistance must be offered at no cost, unless otherwise agreed upon by the Parties involved. The requesting Party must coordinate, manage, and supervise the activities of assistance teams. The requesting Party must also ensure unobstructed receipt and distribution of assistance materials. In addition, transit States are required to provide assistance teams with the necessary support, if so asked by the requesting Party.

Although the Agreement and its Additional Protocol focus specifically on coordinating disaster response among Member States of the Black Sea region, many of the provisions regarding request for and provision of assistance could inform more global efforts to respond to environmental emergencies. The Agreement clarifies the assisting Party's level of authority over assistance teams, particularly with respect to civil defense or protection paramilitary personnel. Additionally, the Agreement outlines the particular responsibilities of the requesting Party to those providing assistance. The Agreement also details a procedure to simplify customs inspection and control. The network of liaison officers established by the Additional Protocol facilitates information exchange; it meets at least once a year to consider trends and to identify new forms of cooperation. While the development of a network of liaison officers offers an innovative approach to emergency response, three of the signatories to the Agreement are not Parties to the Additional Protocol, potentially affecting effective application of the Additional Protocol. In addition, commentators have observed that the Agreement has been rarely resorted to or applied, despite the development of the Additional Protocol.

ASEAN AGREEMENT ON DISASTER MANAGEMENT AND EMERGENCY RESPONSE AND AGREEMENT ON TRANSBOUNDARY HAZE POLLUTION

The Member States of the Association of Southeast Asian Nations (ASEAN) have sought to collaborate to improve preparedness and response to environmental emergencies. Since 1999, ASEAN has consisted of 10 States: Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei Darussalam, Vietnam, Lao PDR, Myanmar, and Cambodia. Through their participation in ASEAN, Member States aim to facilitate regional economic growth and to promote regional stability. ASEAN administers many regional instruments, including the Agreement on Disaster Management and Emergency Response and the Agreement on Transboundary Haze Pollution. Experience with these two agreements may inform efforts to strengthen international governance frameworks for responding to environmental emergencies.

In December 2004, a powerful earthquake off the coast of Indonesia triggered a series of massive tsunamis that hit the coastlines of most countries situated around the Indian Ocean. Millions of people were displaced, injured, or killed in eleven countries. The nations afflicted by this disaster were ill-prepared for a catastrophe of this magnitude. Although the political mandate to improve disaster response in the region had already existed, the devastating impacts of this event compelled ASEAN Members to develop the Agreement on Disaster Management and Emergency Response. Adopted in July 2005, within five months of the start of negotiations, this agreement sets forth a formal and cooperative approach to disaster risk identification, prevention, and response. Under this agreement, Parties facilitate early notification by identifying and monitoring disaster risks and by establishing a national disaster early warning system. Parties can request assistance from other ASEAN nations either directly or through the ASEAN Coordinating Centre for Humanitarian Assistance on disaster management (AHA Centre). These requests must outline the scope and form of aid needed. Assistance can only be provided at the request of a Party or with the consent to an offer made by an Assisting Entity. Parties are also obliged to facilitate provision of assistance by developing strategies and response plans, establishing standard operating procedures, and selecting pre-designated assistance entry points. Through exemption from taxation, duties, and other charges, Parties expedite the import and export of assistance equipment and materials. The AHA Centre facilitates coordination among Parties and with relevant UN and international organizations and acts as an information clearinghouse.

The 1997-98 Indonesia forest fires caused a widespread blanket of haze pollution over Southeast Asia affecting human health and the environment in the region. The impacts of these fires were addressed at the 2002 World Conference on Land and Forest Fire Hazards. Developed during this conference and adopted in June 2002, the Agreement on Transboundary Haze Pollution establishes both preparedness and response measures to mitigate and control sources of transboundary haze pollution in the ASEAN region. Under this agreement, Parties must develop and implement an early warning system. Parties may request assistance from any Party, either directly or through the ASEAN Centre, or from other States and international organizations. These requests must outline the scope and type of assistance needed. Assistance can only be provided at the request of a Party or with the consent to an offer made by an Assisting Entity. Through exemption from taxation, duties, and other charges, Parties facilitate the import and export of assistance equipment and materials.

The ASEAN Centre plays an active role in the establishment of preparedness measures and the coordination of response. The Centre also has a mandate to collect and disseminate lessons learned to Parties.

Although these agreements seek to establish modalities to enhance preparedness for and response to disasters in Southeast Asia, many innovative provisions regarding request for and provision of assistance could inform broader international response to environmental emergencies. The agreements facilitate the entry and departure of assistance through tax and duty exemptions. The Agreement on Disaster Management and Emergency Response additionally requires the pre-designation of entry points for assistance. The AHA Centre and the ASEAN Centre both act as information clearinghouses and facilitate coordination among Parties. The ASEAN Centre also collects and disseminates information on past experiences to Parties, allowing for the identification and incorporation of lessons learned.

Due to the stringent requirement of ratification by all ten ASEAN Member States, the Agreement on Disaster Management and Emergency Response has not yet entered into force to date.

Even so, this agreement has informed regional disaster response practices. In contrast, due to the limited capacity of a key country within the region and limited political will of other countries to push that country to adhere to its commitments, the Agreement on Transboundary Haze Pollution has rarely been implemented, despite its entry into force in 2003.

***THE COORDINATION CENTER FOR THE PREVENTION OF NATURAL DISASTERS IN
CENTRAL AMERICA AND THE COOPERATION MECHANISM (MECANISMO DE
COOPERACIÓN COORDINADA PARA LA RESPUESTA ANTE DESASTRE, OR
CEPREDENAC)***

The Coordination Center for the Prevention of Natural Disasters in Central America is a regional organization designed to strengthen the capacity of Central American States to protect their people from disasters. Six Central American States – Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, and Panama – signed the Convention establishing CEPREDENAC in 1993, which entered into force in 1995. In 1999, regional leaders agreed to a comprehensive plan to reduce regional disasters, the Plan Regional de Reduccion de Desastres or PRRD. As part of the PRRD, a Cooperation Mechanism coordinates humanitarian assistance and fosters cooperation among States. In addition to the six original States, Belize and the Dominican Republic participate in the Mechanism.

The arrangement does not require participating States to offer assistance. However, pursuant to the Mechanism, each participating State should sustain an inventory of material and human resources able to respond to any type of emergency. Requests for assistance under the Mechanism must be made in accordance with one of three protocols. Protocol 1 is suitable when a purely national response is sufficient. Protocol 2 applies when assistance is required from other participating States. Protocol 3 is activated when assistance is required from humanitarian actors beyond the Mechanism's participating States. Assistance under Protocols 2 and 3 should be complementary to existing national efforts. The Mechanism establishes criteria by which States determine whether to activate a higher protocol. For example, Protocol 3 can be activated if after "4 or 5 days," national and regional assistance are insufficient. Before international assistance under Protocols 2 and 3 can be requested, the affected State must notify all other participating States, alerting them to the severity of the emergency, the magnitude of casualties, and the vulnerability of the local population. An alert should include information on areas likely to suffer casualties and material damage, measures already adopted and those that will be adopted, the likely development of the humanitarian situation, identification of relevant domestic authorities and communication agents, and the timing of the next update.

The Mechanism could inform efforts to improve international response to environmental emergencies in a number of ways. The most unique feature of the arrangement is its tiered system of assistance requests. In the event of an emergency, a State must determine, based on the severity of the situation, which protocol to activate. This arrangement encourages efficient use of assistance resources by ensuring that the assistance provided is in line with the magnitude of the emergency. It also specifies both conditions under which an alert should be issued and specific items which must be included in the alert, outlines procedures for offering and requesting regional and international assistance, and offers guidance for coordinating assistance.

The Mechanism provides some general guidance regarding administrative and legal measures that States should undertake to facilitate movement and effective function of assistance personnel and resources. The assisting State should confirm the logistical details of assistance, and should adhere to the requirements of quality, dimensions, etc. for relief goods and other resources. The affected State should ensure that national authorities, especially border authorities, are aware of the incoming assistance, including the routes of entrance and any relevant certifications and identification codes.

RIVER AND LAKE BASIN TREATIES AND ORGANIZATIONS

Over the past three decades, treaties governing transboundary rivers and lakes have increasingly included provisions related to environmental emergency management. There are at least fifteen such agreements, including those governing the Indus (1960), Amazon (1978), Parana (1979), North American Great Lakes (1987), Zambezi (1987), Elbe (1990), Danube (1994), Jordan (1994), Mekong (1995), Ganges (1996), Rhine (1999), Meuse (2002), and Lake Victoria (2003), as well as regional instruments governing multiple bodies such as the UNECE/Helsinki Convention (1992) and the Southern African Development Community (SADC) Water Protocol (2000).

In the absence of an overarching international legal framework for watercourse management, treaties governing specific international waters have adopted different approaches to environmental emergencies. The agreements vary in the content of their provisions and the specificity of their requirements.

Fourteen of these fifteen agreements include provisions for notification of emergency events or at a minimum for the sharing of information in such a way that could foster the practice of notification of emergency events. At one end of the spectrum is the Lake Victoria agreement, which identifies the parties that must be notified in the event of an emergency and explicitly defines the term “emergency.” Conversely, the Elbe treaty only requires that Parties notify the Commission about basic matters so that the Commission can carry out its operations, potentially covering environmental emergencies but not necessarily.

Where the international watercourse agreements address assistance, they generally affirm that assistance should be provided once a request has been made, but do not offer guidance on how to make the initial request. In cases in which agreements specifically mandate the provision of assistance, they leave the procedure for providing assistance to the discretion of the actors. The Danube convention requires the Commission to prepare mechanisms for organizing assistance, providing services and facilities, managing assistance compensation, and reimbursing assistance, allowing the Commission to decide the substance of those measures. Other agreements phrase their ostensible provisions for assistance as a call for cooperation between or among the parties. This spirit of cooperation suggests a willingness to provide assistance; ultimately, though, it leaves assistance to the prerogative of the individual party.

Along with vehicles for notification and assistance, many of the agreements include provisions for preparedness and preventative measures. To that end, the European treaties and organizations mandate warning and alarm systems. Another reoccurring theme is the principle that the polluter pays the costs of prevention, control, and reduction. With their provisions for environmental emergency management, the fifteen agreements collectively address major steps in a coherent management plan – proactive prevention, notification, requesting and providing assistance, and paying for damages – that establishes a foundational framework on which to build.

ANALYSIS OF APPROACHES AND LESSONS LEARNED

Since the Joint UNEP/OCHA Environment Unit was launched in 1994, there has been significant growth in the development and implementation of governance frameworks to respond to environmental emergencies. This has been in spite of the lack of a coherent global legal, policy, and institutional framework on environmental emergencies. Indeed, perhaps the growth of approaches has been because of the lack of a coherent global framework. Without an overarching framework, other than UNGA Resolution 46/182 (broadly addressing disaster response), different institutions have developed and further elaborated conventions, guidelines, and other frameworks governing different aspects of environmental emergencies, or disasters more broadly.

This wide range of approaches – international and regional, binding and non-binding, institutional and normative, general and specific, etc. – provides a rich context in which to contrast experiences and identify lessons learned. Drawing upon a series of case studies of specific international and regional frameworks summarized in the previous section (and available in full in the Annex), this *Baseline Review* now examines the commonalities, differences, and lessons learned in existing international and regional arrangements.

Many existing governance arrangements are relevant when considering what an effective international framework governing response to environmental emergencies might look like. Some of these arrangements address topics that are not, strictly speaking, environmental emergencies. However, international frameworks governing nuclear accidents and radiological emergencies, search and rescue, and civil-military cooperation have adopted innovative and effective approaches that could be adapted to environmental emergencies. In other instances, the term “emergency” – let alone “environmental emergency” – was not used, but the approach was directly relevant. This was the case for many river basin agreements. Sometimes, the term “environment” was mentioned, but as part of a much broader purpose, such as for Tampere Convention and the Community Mechanism.

Strengthening international frameworks governing environmental emergencies can – and should – draw upon lessons from diverse experiences.

General Observations

There are occasionally questions of ***applicability***: does a particular arrangement apply to a specific environmental emergency in a specific context? This is particularly true where multiple institutions may have a mandate, but their respective mandates are unclear and it is unclear which institution should have the lead in responding to and coordinating response efforts to a particular environmental emergency.

The different frameworks define their scope and applicability with varying degrees of precision. Some instruments precisely define the conditions under which they do or do not apply. For example, the UNECE Industrial Accidents Convention applies to land-based, non-military, and non-radiological industrial accidents. The ILO Convention also unambiguously defines the scope of its applicability. The IAEA Conventions on Early Notification and Assistance apply only to nuclear accidents or radiological emergencies with actual or potential transboundary effects, and it is unclear whether they might apply during or as a result of war, armed conflict, terrorism, or other hostilities; indeed, one of the current concerns is whether the failure to explicitly address malicious acts in the IAEA Conventions is a potential gap in its applicability. In contrast, some other instruments use very broad definitions. For example, the Community Mechanism seeks to protect “primarily people but also the environment and property, including cultural heritage, in the event of natural and man-made disasters, acts of terrorism and, technological, radiological or environmental accidents, including accidental marine pollution, occurring inside or outside the Community.”

Even if a particular environmental emergency falls outside of the scope of a particular instrument or institution, strictly defined, practice indicates that institutions still frequently find a way to respond to a severe or high-profile environmental emergency. As necessary as these responses are, however, they are vulnerable to accusations of being *ultra vires* (that is, that the responses go beyond the legal mandate of the institution) and institutions go to great pains to justify their support in such circumstances. For example, while the OPRC Convention addresses oil pollution, neither OPRC nor any of the other IMO instruments specifically address land-based pollution. Rather, land-based sources (LBS) of pollution are addressed through regional seas agreements and their respective LBS

protocols. In addition, the IMO instruments place notification and provision of assistance within particular contexts (such as oil pollution and shipping) and often operate through industry-driven response systems. Moreover, the vast majority of frameworks for responding to environmental emergencies – including the IMO conventions – do not apply to emergencies during or arising from armed conflict or other hostilities.

Thus, following the 2006 bombing at Jiyeh, Lebanon and the subsequent oil spill into the coastal waters, the IMO backstopped response efforts. While IMO has particular expertise and mandates regarding oil pollution response at sea, there were questions regarding whether, how, and to what extent IMO should respond. An IMO legal opinion noted that IMO has a broad mandate to provide technical assistance and coordinate response to major pollution incidents, regardless of cause, if requested to do so by the States concerned. However, response to oil spills is underpinned by the International Oil Pollution Compensation (IOPC) Funds, which provide a liability and compensation structure (and thus financing for response) for oil spills. Since the Lebanon spill was not due to a ship spill and as the IOPC Funds do not apply to acts of war, there were uncertainties how to fund response. Numerous international and bilateral institutions provided assistance. The JEU, MIC, and the Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC) sought to coordinate on-the-ground assistance, through the Lebanese Ministry of Environment. Coordination was a challenge, though, and response efforts were patchwork. There were gaps and overlaps in beach clean-up efforts, with different entities laying claim to different stretches of beach and ultimately not addressing certain stretches. This situation was similar to the 1990-91 Gulf War, which saw extensive damage to the coastal and marine environments from land-based spills of petroleum, as well as a significant ad hoc response to the environmental emergency.

The **clarity and completeness** of terms varies greatly among the frameworks. For example, none of the instruments examined clearly defines what constitutes an “environmental emergency.” The Oslo Guidelines apply to “natural, technological, and environmental emergencies,” but these terms are never defined. Other important terms are frequently defined: the UNECE Industrial Accidents Convention has a detailed definitions section, clearly defining what constitutes a “hazardous activity,” “industrial accident,” and “affected Party.”

The lack of a formal definition of “environmental emergencies” creates challenges while also providing some benefits. The definition of an environmental emergency is important in determining which specific response mechanisms are triggered at the local, national, or international levels. Following an earthquake in Pakistan in 2005, relief efforts were hampered by land slides. It was not clear whether the land slides constituted “environmental emergencies”; however, since the land slides affected the relief efforts, timely response was necessary. The Joint Environment Unit brought in a slope stabilization expert from Switzerland and experts from the U.S. Army Corps of Engineers to solve the problem. In this instance, the lack of a definition enabled the Joint Environment Unit to respond in a timely manner, without deliberating over whether this was within its mandate. Since then, land slides are considered a potential environmental emergency. This example illustrates how the scope of what constitutes an environmental emergency evolves over time to reflect the practical, on-the-ground needs.

Since the term “environmental emergency” has not been defined for the JEU, the Unit benefits from a de facto broad view of the term which enables it to act rapidly where other institutions may not have an explicit mandate. As a result, the Unit is able to serve as a responder of last resort.

Governance frameworks also have varying degrees of clarity and completeness in **defining the roles and responsibilities of key institutions**. Some frameworks clearly define the respective roles of different authorities. For example, the BSEC Agreement defines essential terms and details the role of the “competent body”; and the INSARAG Guidelines define the role of the National Focal Point within both affected and assisting countries. Moreover, the various IMO Conventions examined provide clear definitions of convention terms. For instance, the OPRC defines the roles of the “national contact point,” “competent national authority,” and “authority,” and emphasizes the distinct role of each of these positions. The two ASEAN Agreements also differentiate between a “focal point” and a “competent authority.” SAR additionally defines the role of an “on-scene commander” and outlines this position’s responsibilities.

In contrast, other frameworks refer to key institutions or authorities, but do not define their roles, responsibilities, or requirements clearly. For example, the ILO Convention requires notification in the event of an accident by the employer to the “competent authority,” but the term is never defined.

Increasingly, though, efforts are being made to clarify the respective roles of key institutions. Thus, while the IAEA Conventions do not provide definitions on the distinction between a “point of contact” and a “competent authority,” a manual provides clarifying operational detail. In particular, the Emergency Notification and Assistance Technical Operations Manual (ENATOM) distinguishes between these two responsibilities and outlines their respective roles. The IAEA has also facilitated the development and iterative refining of a Joint Plan to improve coordination among various international organizations with responsibility for responding to nuclear and radiological emergencies. The framework established in the Joint Plan outlines the particular responsibilities of each participating international organization, and provides an overall structure describing how these organizations should ideally work together. Within the context of the broader UN reform process, it is also worth noting the ongoing effort to improve international environmental governance that would strengthen coordination of international institutions and instruments working on various environmental issues.

There are benefits of having a **well-funded, high-profile** international organization administer a particular arrangement. For example, the IAEA and the Community Mechanism are able to mobilize significant resources on short notice to respond to environmental emergencies. In contrast, it is much more challenging for regional bodies such as ASEAN and most river basin organizations to mobilize resources. The UN’s international standing can assist in response, but there are limitations. UNECE has established an Assistance Programme under its Convention on Transboundary Effects of Industrial Accidents that allows funds to be channeled to Parties that lack the human or financial resources to fully implement all provisions. On the other hand, the UN’s profile did not ensure that either Myanmar or China would accept the offers of UN assistance in a timely way (or at all) in 2008, following Cyclone Nargis and the earthquake in Sichuan Province, respectively. There were also difficulties with the OCHA-trained civil-military coordination officers that were sent in response to 2004 Indian Ocean Tsunami pursuant to the Oslo Guidelines, that the Tsunami Evaluation Coalition found to be “ill equipped institutionally and technically to undertake this [coordination] task.”

The effectiveness of international organizations depends in part on whether they have an **active or passive role**. As noted below, some institutions (such as the IAEA and the Community Mechanism) have an active role in notification of an emergency, receiving notices and circulating information. International institutions frequently have an active role in processing requests for assistance and coordinating the provision of assistance, including the IAEA, the Tampere Convention (through the operational coordinator), the Community Mechanism, and the Oslo Guidelines (through OCHA’s Civil-Military Coordination Section). As discussed below, international organizations also play an important role in standardizing assistance. Several arrangements provide for an information clearing house (including the Telecommunications Assistance Information Inventory under the Tampere Convention; the Oslo Guidelines, and the IMO). While UNECE does not establish a clearing house, the UNECE Industrial Accidents Convention mandates that Parties exchange information and provides specific elements this exchange should consist of in a separate annex. Most international organizations also have some more passive, facilitative administrative roles (such as organizing COPs and monitoring implementation) and capacity building.

Notification

Notification of an emergency is the first step and a core element of effective response. Experience shows that notification may be required to an international organization, other states, or both (or even to NGOs). The most effective arrangements tend to require countries to **notify an international institution**. For example, the Community Mechanism – one of the more successful institutions (see examples section and appendix in the case study) – requires notification to the Monitoring and Information Centre (MIC) when there is a “major emergency” (or threat thereof) in one of the participating states and which either has transboundary effects or “may result in a call for assistance through the MIC.” Similarly, the IAEA Notification Convention requires the State Party in which a nuclear accident occurs to immediately notify the IAEA; it may also notify affected or potentially affected States, but it must notify IAEA.

The IMO Conventions – which rely on States to respond to emergencies, resulting in a lower-profile role for the IMO – adopt a different approach. Generally speaking, the IMO facilitates, backstops, and mobilizes technical assistance, but does not usually play a direct role initially in emergency response. Rather, the IMO acts as a clearing house for information necessary for the coordination of emergency response such as responsible authorities, response capacities of States, and national contingency plans. Accordingly, under the IMO Conventions, affected or potentially affected States must be notified of an emergency, but notification of the IMO is not obligatory.

The more effective regimes tend to establish **detailed provisions for notification**. For example, under the Convention on Early Notification, a State Party providing notification must include specific information about the nuclear accident including the time, exact location, general characteristics of the radioactive release, results of environmental monitoring, and off-site protective measures taken or planned. Under the BSEC Additional Protocol, requests for assistance must be sent within one day when the case is “urgent,” or within three days for all other cases. Under CEPREDENAC, before international assistance under Protocols 2 and 3 can be requested, the affected State must notify all other participating States, alerting them to the severity of the emergency, the magnitude of casualties, and the vulnerability of the local population. An alert should include information on areas likely to suffer casualties and material damage, measures already adopted and those that will be adopted, the likely development of the humanitarian situation, identification of relevant domestic authorities and communication agents, and the timing of the next update.

The Joint Plan outlines two ways in which States can inform the IAEA of a nuclear or radiological emergency: an advisory or a notification. The Plan’s inclusion of a less formal advisory, in addition to a formal notification, provides advanced warning to States and international organizations so that they can be more prepared to respond. The Plan also specifies what means of communication should be used in a particular situation.

Many IMO Conventions also have relatively detailed notification provisions. OPRC requires Parties to notify affected or potentially affected States of their assessments and any actions taken or intended to respond to the oil pollution incident. SOLAS requires detailed information on potential dangers encountered at sea such as coordinates and physical properties of the danger observed.

Often, however, the **time frame required for notification is qualitative**, rather than quantitative. Thus, notification is typically required “immediately,” “without delay,” or “as soon as possible.” One of the exceptions – and strictly speaking it is in the context of the timeframe for responding to an emergency, rather than notification – is the INSARAG Guidelines. Under these Guidelines, USAR team certification level not only indicates the team’s level of expertise, but also outlines a corresponding time frame in which the USAR team is expected to respond to a disaster.

International frameworks for responding to environmental emergencies often provide for **periodic updates**, either encouraging or requiring affected States to provide updates. For example, many IMO Conventions require updates. SOLAS provides a specific time frame for information updates, stating that it is desirable that further observations be made and transmitted hourly, and updated observations should be transmitted at least every three hours. SAR requires the on-scene commander to make periodic reports to the appropriate rescue coordination center or sub-center. OPRC also requires updates.

Frameworks may require States and/or international organizations to provide updates. Under the IAEA Notification Convention, a State Party experiencing a nuclear accident with actual or likely transboundary effects must supplement initial information at relevant intervals to affected and potentially affected States. In addition, the IAEA must update – upon request – any State Party, IAEA Member State, or relevant international organization with any new information that the IAEA receives.

Many other international frameworks provide for updating. The INSARAG Guidelines require affected countries to provide regular situation updates through the Virtual OSOCC. Under the Community Mechanism, an affected State must keep updating the MIC on the latest developments “if any risks for transboundary consequences may appear”; the MIC subsequently informs other participating States. Under the UNECE IAN system, updates are mandatory. A follow-up Information Report should include “detailed supplementary information about the accident” once an assessment of the situation has taken place or when new information emerges. The BSEC Agreement also requires the requesting Party to provide updates.

To facilitate notification, reporting, and communication, some institutions have adopted **standardized forms**. For example, the UNECE has developed – pursuant to the Industrial Accidents Convention – a standardized Early Warning Report (for notification), a standardized Information Report (for updates on the situation), and a Standard IAN Assistance Request Report (for requesting assistance).

The INSARAG Guidelines utilize the Virtual OSOCC, a password-protected website that facilitates information exchange between the affected country and responders. The Virtual OSOCC standardizes requests for assistance and promotes efficient allocation of resources. An affected

country uses the Virtual OSOCC to request assistance and post prioritized needs. The Virtual OSOCC not only informs potential assisting countries and international organizations of the affected country's needs, but it also posts the current responses of other countries and search and rescue teams to the request.

Even where there is not a standardized form, governance frameworks may set forth specific requirements for communications. While the Convention on Early Notification does not explicitly mention standardized means for notification, reporting, and other communications, the IAEA's Emergency Notification and Assistance Technical Operations Manual (ENATOM) provides further details on these matters. The Manual states that all communication should be in uncoded form, and preferably in English. The Manual also outlines the appropriate situations to use fax, the protected website, telephone, or email in order to ensure a prompt response to a nuclear or radiological emergency. However, these details only pertain to communication with the IAEA, and not with other countries or international organizations.

Despite its central importance for effective communication, international governance frameworks only sometimes specify the **language** for communications. Parties to the UNECE Industrial Accidents Convention should use "one of the official UNECE languages [English, French, and Russian], taking into account which of these languages the authorities in the affected countries are most likely to understand."

The IAEA officially accepts communications in all six official languages of the Agency, but its 24-hour staff may not be fluent in one of the languages. Accordingly, ENATOM states that communications should preferably occur in English, and members of the IAEA explained that while the IAEA does not specify a standard language, English is preferred. Therefore, most IAEA communications (which occur via fax or its protected website) are in English.

Some IMO Conventions specify the languages to be used in communication. SOLAS specifies that notification of danger may be transmitted in either "plain language (preferably English) or by means of the International Code of Signals." Under SAR, prepared assistance must have instructions in "English and at least two other languages" and be color-coded according to content.

Request for Assistance

With respect to request for assistance, there is **no consensus approach** for ensuring that requests are made to a particular central body in a timely manner, that requests are in a particular format or language, that such requests are circulated, or that Member States respond to the requests within a specific timeframe. That said, the diversity of approaches do highlight some interesting contrasts. Many of the following observations are similar to those for notification.

Generally speaking, States are **not compelled to request** assistance. They may be required to notify affected countries, potentially affected countries, and/or international organizations, but they do not have to request assistance.

If a State decides to request assistance, most international and regional frameworks provide specific processes for making and processing such requests. These provisions typically address to whom requests should be made, the content and form of the requests, and the timeframe for processing the requests.

Requests may be sent to Parties, other States, international organizations, and other entities. As noted above, there is comparatively more flexibility regarding **to whom** requests should be made than for notification. The two IAEA Conventions illustrate this point. Under the IAEA Assistance Convention, States can request assistance from any other State Party, directly or through the IAEA; from the IAEA; or from other international organizations. In contrast to the IAEA Notification Convention, these communications are not mandatory, and it is not necessary to convey these communications to the IAEA.

For the Joint Plan, countries officially request assistance through the Convention on Assistance. If additional resources from international organizations are needed, then the Joint Plan is used. If a State requests assistance from or through the IAEA under the Convention on Assistance, the IAEA's Incident and Emergency Centre (IEC), the focal point for emergency response, informs the relevant organizations and coordinates resources.

The Tampere Convention allows requests to be made directly to other Parties or through the operational coordinator. The MIC coordinates requests made to the Community Mechanism: once the MIC receives a request for assistance, it must dispatch this request to the participating States' contact points. It then coordinates the communication between the requesting state and the Member States who might provide assistance. And, as mentioned earlier, under the BSEC Additional Protocol, the liaison officers are responsible for forwarding requests to the proper authorities within their respective countries. Parties to the two ASEAN Agreements can request assistance through the AHA Centre (Disaster) and the ASEAN Centre (Transboundary Haze).

There is a fair amount of flexibility when requesting assistance, but frequently international frameworks provide guidance regarding the **content of the request** for assistance. For example, under the IAEA Assistance Convention, when requesting assistance, a State Party must specify the scope and type of assistance required. Under the BSEC Agreement, a Party can request assistance from other Parties by forwarding the national appeal. The BSEC Agreement specifies that the Requesting Party must provide the specific details about the disaster. In addition, the Requesting Party must also provide information on actions that have already been taken to control and mitigate the disaster, and must prioritize the country's needs.

As discussed in the context of notification, some international frameworks also provide for **standardization of requests for assistance**. The INSARAG Guidelines use the Virtual OSOCC as a standardized means for requesting assistance and sharing the affected country's prioritized needs. Under the IAEA Convention on Assistance, when requesting assistance, the State Party must specify the scope and type of assistance required; and ENATOM provides specific information regarding the standardized form for requests for assistance. Requests for assistance under CEPREDENAC must be made in accordance with one of three protocols. Protocol 1 is suitable when a purely national response is sufficient; Protocol 2 applies when assistance is required from other participating States; and Protocol 3 is activated when assistance is required from humanitarian actors beyond the CEPREDENAC Mechanism's participating States. Assistance under Protocols 2 and 3 should be complementary to existing national efforts. The Mechanism establishes criteria by which States determine whether to activate a higher protocol.

The **timeframes** for deciding whether to render the requested assistance are usually qualitative, and sometimes quantitative. Under the IAEA Assistance Convention, each Party from which assistance is requested must "promptly decide and notify the requesting State Party, directly or through the Agency" whether it will provide assistance. Under the Tampere Convention, a Party should decide "promptly." Under the UNECE Industrial Accidents Convention, the Party must "promptly decide." Under the Community Mechanism, participating States must "immediately" inform the MIC about their capacity to provide assistance. Under the BSEC Agreement, when the Assisting Party receives a request for assistance, it must "immediately" make a decision about its ability to offer assistance, and must then inform the Requesting Party of its decision.

In some instances, Parties are **required to respond** to requests for assistance. This requirement facilitates rapid decision making regarding how best to address an environmental emergency: what resources are available, when, from whom, etc. As noted immediately above, the Community Mechanism requires immediate responses. Under OPRC and OPRC-HNS, which are both administered by the IMO, Parties must respond to "the request of any Party affected or likely to be affected [by a pollution incident]." Both ASEAN Agreements require States Party from whom assistance is requested to decide promptly whether they can offer the requested assistance, and then notify the requesting Party of its decision.

Coordination among international organizations in responding to requests for assistance can make response more efficient and effective. The Joint Plan differentiates between requests for advice and requests for assistance. If a State requests advice or services of any relevant international organization on a subject matter spanning the expertise of more than one organization, the relevant organizations must confer and agree, to the extent possible, on the advice to be provided. A requesting Party may contact relevant international organizations for emergency assistance in areas related to their technical expertise. The course of action taken in response to a request for assistance depends upon from whom the assistance was requested. Any participating international organization that receives a request for assistance in response to a nuclear or radiological emergency informs the IAEA and other relevant international organizations of the request, and then coordinates the provision of assistance with those organizations, according to their established roles.

International organizations can also facilitate coordination of bilateral assistance. Under the IAEA Assistance Convention, an Assisting State can either: (1) directly contact the State Party requesting help, or (2) contact the IAEA, which will then relay the State Party's response to the affected State Party.

Databases of available resources can facilitate a rapid response to requests for assistance. For example, if the MIC receives a request for experts, it consults an expert database established by the Community Mechanism, and enquires with the participating States about the availability of experts ready to leave within 3 hours after their designation. The MIC selects the experts, after consulting with the requesting State, and then informs the participating States of their selection.

Some agreements specify the **content of response** to a request for assistance. Such provisions typically require would-be Assisting Parties to clarify the nature, scope, timing, and terms of assistance that they would provide. For example, under the BSEC Agreement, the Assisting Party must outline the amount of assistance it intends to provide, and its conditions for provision of assistance. Similarly, States participating in the Community Mechanism must inform the MIC about their capacity to provide assistance, its scope, and any associated terms. Under the IAEA Assistance Convention, a would-be Assisting State must inform the Requesting State about "the scope and terms of the assistance that might be rendered." The UNECE Industrial Accidents Convention requires a Party that receives a request for assistance to inform the requesting Party "whether it is in a position to render the assistance required" and to state the scope and associated terms of any assistance it has agreed to provide.

Offer of Assistance

In most instances, offers of assistance are made on a **voluntary** basis. The approach adopted by the Tampere Convention is typical: the decision to offer assistance, the nature of the assistance, and the terms of assistance are all up to the discretion of the State and/or non-state actors offering assistance.

Reflecting the voluntary nature of offers of assistance, there frequently is **flexibility** in how to manage offers of assistance. For example, the ILO Convention does not address assistance requests for or offers of assistance directly; rather, each Member State may devise appropriate procedures for this purpose as part of their emergency preparedness measures taken pursuant to Article 15 of the Convention. Similarly, under the Tampere Convention, non-state actors may establish their own procedures for offer and termination of assistance.

Sometimes, it is **mandatory** to offer assistance. For example, SOLAS requires all ship masters to offer assistance: upon "receiving a signal from any source that a ship or aircraft or survival craft thereof is in distress, [the ship] is bound to proceed with all speed to the assistance of the persons in distress informing them if possible that he is doing so."

Offers for assistance may be submitted **directly to States or through international organizations**. International organizations can facilitate communication and coordination of offers for assistance. For example, under the Tampere Convention, the operational coordinator receives requests for assistance as well as offers of assistance and must ensure that the affected Party knows as soon as possible the type and scope of assistance available to it.

During an environmental emergency or other disaster, there is often widespread confusion. Accordingly, it can be valuable to **specify beforehand which authorities have a mandate** to request, offer, and accept assistance. Under the Tampere Convention, States Parties are required to submit to the Telecommunication Assistance Information Inventory information about domestic authorities that are "authorized to request, offer, accept and terminate telecommunication assistance."

Some frameworks encourage States and non-state actors to be **specific in communicating** their offer of assistance. The IFRC Guidelines provide that both offers and requests for assistance should be as specific as possible with regard to the goods, services, and/or expertise being offered or requested. Under the Guidelines, Affected States "may also wish" to communicate to actors offering assistance which types of goods and services likely to be offered are not needed.

Offers of assistance can be **specific or general**. In many instances, States and non-state actors make specific offers of assistance in response to an emergency. In addition, offers may be

general. Under the Community Mechanism, the European Commission is empowered to inform third countries affected by major emergencies of assistance that could be available to them under the Mechanism. States, international organizations, and NGOs may indicate in advance the sort of assistance that they may be able to offer should the need arise. For example, pursuant to the Oslo Guidelines, OCHA maintains a Central Register of Disaster Management Capabilities, which includes a Directory of MCDA. This Central Register contains information provided by States and organizations regarding resources, including military-related assets that can be made available for use in disaster relief operations. Depending on the need, the Civil Military Coordination Section of OCHA will then contact the relevant States and organizations based on the information they have submitted to the Directory. Similarly, under the IAEA Assistance Convention, States Party providing assistance must “identify and notify the Agency of experts, equipment, and materials which could be made available for the provision of assistance to other States Parties in the event of a nuclear accident or radiological emergency.”

There appears to be some sensitivity about offers of assistance relating to **military assets**: military assets are generally considered assistance of last resort. Under the IFRC Guidelines, military assets in particular should be made available only at the request, or with the express consent, of the affected State and only after having considered “comparable civilian alternatives.” Similarly, under the Oslo Guidelines, all military and civil defense assets for disaster relief should be provided “at the request or with the consent of the Affected State.”

Provision of Assistance

Provision of assistance is generally **voluntary** and on a case-by-case basis. There are a couple of notable exceptions, where it is **mandatory** to provide assistance. These provisions frequently apply at sea, where there may not be other sources of assistance readily available. SOLAS, discussed above, is one example; another is Search and Rescue (SAR). Under SAR, the responsibility to offer and provide assistance to a person in distress at sea lies with the Party that provides the overall coordination of search and rescue operations within the area in which a distressed person is found. Thus, obligation to provide aid is linked to location.

Under some international frameworks, Parties commit to generally providing assistance. For example, OPRC provides that “Parties agree that, subject to their capabilities and the availability of relevant resources, they will co-operate and provide advisory services, technical support and equipment for the purpose of responding to an oil pollution incident, when the severity of such incident so justifies, upon the request of any Party affected or likely to be affected.” Despite the numerous caveats and conditions, Parties agreed that they would cooperate and provide assistance.

With respect to provision of assistance, it is relatively more common for coordination of provision of assistance to be **facilitated by an international organization**, although on-the-ground coordination is usually done by the Requesting State that is receiving assistance. Such arrangements include, for example, those established by the IAEA Assistance Convention and the Tampere Convention, as discussed above. Under the INSARAG Guidelines, OCHA helps to coordinate the flow of information necessary to effectively respond to a disaster. This is done in large part through OCHA’s management of the Virtual OSOCC, a website that facilitates information exchange between the affected country and responders.

Several arrangements provide **detailed legal and administrative measures** regarding movement into, through, and out of territory of personnel, materials, cargo, and equipment. The Tampere Convention is devoted in large part to setting forth detailed legal and administrative measures to facilitate provision of assistance. The IFRC Guidelines aim to ensure that host countries provide the necessary “legal facilities” to foreign actors performing assistance functions, and the Guidelines detail eligibility criteria for such facilities. The Oslo Guidelines and related Model Agreement similarly provide detailed guidance to facilitate provision of assistance.

The INSARAG Guidelines facilitate the entry and exit of assistance both through preparedness measures and by streamlining immigration and customs requirements. International USAR teams are responsible for ensuring that team members and search dogs maintain appropriate immunizations and that all team members carry up-to-date travel documents. The affected country is expected to provide international USAR teams with visa assistance and to offer entry permission for equipment, search dogs, and emergency medical pharmaceuticals. The Guidelines also establish a

reception departure centre (RDC), which facilitates the arrival and departure of international response teams through cooperation with immigration, customs, and local authorities.

In some instances, the legal and administrative details may be articulated subsequently to the convention or other framework document. The IAEA Assistance Convention emphasizes the need to facilitate the quick entry and exit of assisting personnel, equipment, and materials, but the convention text does not detail specific standards or processes that the Requesting State needs to undertake to expedite the immigration, importation, or exportation processes. However, the Response Assistance Network (RANET), a global response arrangement designed to coordinate international assistance in the case of a radiation incident or emergency, outlines information that should be contained in the Assistance Action Plan. The Assistance Action Plan is drafted by the IAEA in coordination with the Requesting State and competent authorities and international organizations providing assistance. One section of the Assistance Action Plan is devoted to the responsibilities of the Requesting State.

Under the BSEC Agreement, the Requesting Party must ensure “unobstructed receipt and distribution” of assistance materials. Equipment and materials exported and imported for assistance are exempt from customs duties, taxes, and fees. Customs inspection and control must also be carried out in “a simplified manner on priority basis,” according to notices provided by the Competent Bodies of the Parties. The Agreement additionally outlines specific details on the import and export of medical drugs. The BSEC Agreement also sets forth requirements to facilitate the movement of assistance through Transit States.

Some IMO conventions contain provisions designed to greatly reduce legal or administrative barriers in times of emergency. For example, OPRC, OPRC-HNS, and SAR include provisions that facilitate the expedited movement of ships, personnel, equipment, and materials into and out of territorial waters.

In order to provide additional guidance and details, a number of frameworks provide **guidance** documents. These guidance documents are typically oriented toward States, but also may be relevant to international organizations providing assistance. They provide models that inform bilateral agreements, national legislation, and institutional frameworks. Some instruments, such as the IFRC Guidelines, encourage States to adopt such frameworks at the domestic level. Some frameworks, including the UNECE Industrial Accidents Convention and the Oslo Guidelines, provide for the development of further bilateral agreements. A number of IMO conventions include provisions that outline a required preparedness plan that allows for quick and efficient emergency response.

Some international frameworks explicitly consider issues of **confidential information**. The IAEA Assistance Convention is one of these rare frameworks that addresses these concerns, perhaps due to the political and national security sensitivities related to nuclear facilities. It requires Parties – including Assisting Parties – to protect confidential information, and to only use confidential information for the agreed upon purpose. Similarly, the Joint Plan requires international organizations to clearly mark information as being for the receiving organization’s use only, for use by relevant authorities only, or for general use. International organizations must also specify after what delay, if any, the information may be shared.

More broadly, the UNECE Industrial Accidents Convention protects “information related to personal data, industrial and commercial secrecy, including intellectual property, or national security.” Confidential personal data is also protected under the BSEC Agreement. The receiving Party may use personal data as long as it respects the conditions and purposes prescribed by the Party sending the information. The Competent Body alone can receive personal data, and it must obtain written permission from the sending Party before re-exchanging this information.

In order to improve the effectiveness of assistance, different frameworks have undertaken a series of measures to **standardize assistance**. This is often through the development of a standard set of phases with accompanying procedures and requirements. The International Convention on Maritime Search and Rescue (SAR Convention) standardizes provision of assistance through the creation of three emergency phases: uncertainty, alert, and distress, each with its own respective protocol. Similarly, ENATOM standardizes provision of assistance by including response modes in its overall concept of operations. Under ENATOM, the coordination point within the IAEA operates in three modes: normal/ready, basic response, and full response, with each mode varying in response actions and urgency. The Joint Plan standardizes assistance through the classification of potential types of emergencies with corresponding concepts of operation. The Joint Plan classifies types of emergencies and outlines a specific concept of operations for each kind of emergency detailing how

international assistance should be coordinated. Another example of standardizing assistance is the EU civil protection modules.

The INSARAG Guidelines standardize assistance through **certification** of USAR team at different levels: light, medium, and heavy. Regardless of their classification, all USAR teams contain management, logistics, search, rescue, and medical components.

The range of approaches can inform decisions regarding key governance issues. For example, the **responsible actors** may be States (per most of the arrangements studied), international organizations, and/or private actors (as with most IMO frameworks). As mentioned earlier, RANET outlines the information that should be included in the Assistance Action Plan. Each Assistance Action Plan is specific to a particular emergency, with a portion of the plan detailing the responsibilities of both the requesting State and the assisting States/international organizations. The INSARAG Guidelines set forth detailed responsibilities of the hosting country toward those providing assistance. The BSEC Agreement establishes responsibilities for both Requesting Parties (including providing interpreters and communication means; re-supplying assistance teams; and ensuring security, free medical care, food, and accommodation for assistance teams) and assistance teams (self-sufficient operation for at least 72 hours after their arrival).

A number of governance frameworks establish methodologies for analyzing lessons learned and identifying **ways to improve** the operation of the framework. Many IMO conventions require States to investigate and to notify the IMO if they learn anything about how to improve the operation of the Convention, including potential amendments to the Convention. MARPOL requires Parties to cooperate in the detection of convention violations. Both MARPOL and SOLAS call for investigation into ship casualties. OPRC (and OPRC-HNS) require evaluation of the convention's effectiveness. These provisions may be at least partially responsible for the continual improvement, refinement, and amendment of IMO instruments. The two ASEAN Agreements provide for regular (generally annual) review and evaluation of implementation measures.

Similar to the requirements to investigate and identify lessons learned under MARPOL and SOLAS, the INSARAG Guidelines include provisions that allow for the incorporation of lessons learned. Within 45 days of the completion of a disaster mission, international USAR teams should develop a Post-Mission Report and should forward this report to the INSARAG Secretariat. OCHA reviews these Post-Mission Reports, analyzes USAR team operations, and may convene a "lessons learned meeting" with all stakeholders, when necessary.

For many international agreements, the Conference of the Parties (COP) provides a mechanism for reviewing the status of implementation, identifying trends and gaps, and developing measures to improve the operation and effectiveness of the agreement. For instance, the original text of the UNECE Industrial Accidents Convention called generally for the creation of a notification system; the COP created the Industrial Accident Notification (IAN) System subsequently subjected it to testing. The COP also began the Assistance Programme to help less-developed Parties implement the Convention.

Other forms of meetings can also facilitate improved operation and implementation. Under the Additional Protocol to the BSEC Agreement, the liaison officers of participating countries must meet once a year to consider trends and to identify new forms of cooperation. The Joint Plan created the Inter-Agency Committee on Response to Nuclear Accidents (IACRNA) to enhance emergency preparedness. IACRNA is composed of representatives from each participating international organization, and is chaired by the IAEA. IACRNA identifies new areas for inter-agency cooperation and reviews the Joint Plan every two years.

Capacity Building and Awareness Raising

As set forth in the "principles" of UNGA Resolution 46/182, the responsibility for emergency response should be first local and national, then regional, then international. In practice, however, large-scale disasters are seen from the beginning as international disasters. The world has become fast at responding to large-scale disasters. In poorer regions with lower search and rescue (SAR) capacity, – and particularly disaster-prone developing countries – the challenge lies in educating developing countries regarding the international resources that are available to them, what they need to do to mobilize those resources, and how they can manage and coordinate this assistance.

INSARAG seeks to help these countries through their large-scale emergency **simulations** and through **education**.

To promote readiness, identify potential operational challenges, and improve delivery of assistance, INSARAG and some other governance frameworks undertake and promote simulations. These simulations may build upon existing training materials. For example, the INSARAG Guidelines promote the deployment of teams in continual local use. The Guidelines also institute INSARAG Awareness Training Modules, which are large-scale exercises that allow countries to practice coordinating both national and international disaster response through simulated emergencies. As of 2008, INSARAG holds four to six simulations per year, and has scheduled simulations through 2011. Some institutions promote simulations on a less frequent basis. For example, the Inter-Agency Committee on Response to Nuclear Accidents (IACRANA), created under the Joint Plan, coordinates drills and exercises. In 2005, Romania hosted an exercise involving 60 countries and 10 international organizations; in 2008, Mexico will host the next international exercise.

RECOMMENDATIONS*

There has been a growing number of environmental emergencies, and it is expected that this trend will continue, particularly due to climate change. Unfortunately, the existing international governance structures for response to environmental emergencies are fragmented. To the extent that there are formal institutional mechanisms in place, they tend to be limited in geographic scope (e.g., regional) or thematic focus (e.g., marine). Thus, at the global and regional levels, dozens of institutions work on different aspects of environmental emergencies. This means that the institutional and normative frameworks often overlap, and there are sometimes gaps. Accordingly, as outlined above, the international governance system faces a number of additional challenges regarding the ability to effectively respond to environmental emergencies, including lack of coordination, detailed guidance, and awareness.

The Joint Environment Unit plays a de facto lead role in coordinating the response to environmental emergencies. In addition to strengthening the JEU, there are many other measures that could improve the international governance systems for responding to environmental emergencies.

The case studies highlighted in this *Baseline Review* – as well as other experiences not profiled here – shows that a significant body of experience and innovation has developed over the past few years. Generally speaking, however, these experiences have not been replicated or scaled up. The lessons learned from these different approaches and experiences can inform measures to strengthen governance systems for responding to environmental emergencies.

Options for Strengthening International Frameworks Governing Response to Environmental Emergencies

<p><u>Operational Measures</u></p> <ul style="list-style-type: none"> • Develop and implement a Joint Management Plan for Environmental Emergencies • Develop guidance for responding to environmental emergencies • Develop and implement a certification system for responding to environmental emergencies 	<p>Address Unresolved Issues</p>
<p><u>Capacity Building and Awareness Raising Measures</u></p> <ul style="list-style-type: none"> • Strengthen regional systems for responding to environmental emergencies • Conduct training and raise awareness • Institutionalizing technical assistance and capacity building 	
<p><u>Legal and Policy Measures</u></p> <ul style="list-style-type: none"> • Secure a political mandate for improving international environmental emergency governance systems • Develop a new international legal instrument governing notification and response to environmental emergencies 	

Based on the research conducted for this *Baseline Review* and taking into consideration the AGEE deliberations at Tunis (December 2007) and Dr. Calvi-Parisetti's analysis which the AGEE endorsed, this *Baseline Review* proposes three sets of recommendations. These are outlined in the table on the previous page. These recommendations seek to strengthen the international frameworks governing response to environmental emergencies through enhanced operational measures, capacity building and awareness raising, and legal and policy measures. In addition, this *Baseline Review* identifies a number of gaps and other unresolved issues – many of which cut across legal, operational, training, and awareness considerations – that should be addressed.

There is significant flexibility in the timing and order for undertaking these measures.

Some activities may be undertaken in the short- and medium-term, while it may be appropriate to consider others as longer-term measures. In assessing the feasibility and desirability of the options, the year 2012 provides an important benchmark, conveniently dividing short- and medium-term measures from long-term measures.

2012 provides a once-in-a-decade opportunity to focus international attention on improving international frameworks for responding to environmental

* NOTE: Some of the recommendations proposed in this *Baseline Review* are similar to recommendations from the other two Thematic Areas of the Rosersberg Initiative. As such, implementation should be coordinated across the various Thematic Areas.

2012 is a potentially momentous year. It is likely that the next global environmental summit will take place in 2012, following Stockholm (1972), Nairobi (1982), Rio de Janeiro (1992), and Johannesburg (2002). It is also the year that the Kyoto Protocol is set to expire. Additionally, many of the medium-term plans to implement the Millennium Development Goals end in 2012. In short, international attention – at the Heads-of-State level – will be focused on a wide range of environmental issues in 2012. Accordingly, the AGEE and States may wish to consider how to make the most of this once-in-a-decade opportunity.

There are a number of options for action leading up to, at, and following the next global summit. Following is a summary of measures, describing their purpose, scope, and benefits and risks. Subsequently, the priority and timing for these measures is briefly considered.

Operational Measures

In order to improve the operational efficiency and effectiveness in responding to environmental emergencies, there are a number of initiatives that States, the JEU, and others can undertake. These include:

- Develop and implement a Joint Management Plan for Environmental Emergencies;
- Develop guidance for responding to environmental emergencies; and
- Develop and implement a certification system for responding to environmental emergencies.

These measures are discussed in more detail below. These measures can be pursued independently or simultaneously. There are numerous opportunities for synergies among these options, and they can also lay the groundwork for training, awareness raising, legal, and policy options. For example, guidance can provide standards and a framework that can support strengthening of regional systems, as well as a more formal international legal framework.

Broadly speaking, these measures can facilitate institutional coordination (including in the transition from emergency response to early recovery), provide additional detail and clarity (particularly where existing frameworks are overly general), and improve standardization in the delivery of assistance. As a result, these operational measures can improve the efficiency and effectiveness of notification and assistance. They also have the benefit that they can be pursued immediately through administrative means: while a political mandate or international instrument could facilitate these measures, they are not necessary.

These measures could improve the operational effectiveness of international, regional, and bilateral institutions in responding to environmental emergencies. Since they would be non-binding, there would be fewer political considerations and they probably could be initiated relatively quickly. At the same time, if the measures are not binding, they may not possess the character necessary to change practices, unless there is significant funding to undertake outreach and capacity building. Indeed, the measures generally will require a moderate commitment of financial and personnel resources to develop and implement, so their viability will depend on securing the necessary funding.

Develop and Implement a Joint Management Plan for Environmental Emergencies

In light of the various international institutions, conventions, and guidelines addressing different aspects of environmental emergencies, a top priority should be to improve coordination and communication. One way to do this would be to develop a Joint Management Plan for Environmental Emergencies. This Joint Plan could be a UN-wide instrument to improve coordination of various UN bodies responding to environmental emergencies; it could also be extended to targeted international organizations that are not part of the United Nations and regional bodies (such as the (European) Community Mechanism/ MIC). A Joint Management Plan on Environmental Emergencies could draw upon the experiences in developing, updating, and implementing the Joint Radiation Emergency Management Plan of the International Organizations, which the IAEA has developed in partnership with a growing number of institutions (now totaling 15). The mandates of the various UNGA Resolutions – and particularly 46/182, discussed above – for coordinating and cooperating on matters relating to disaster response could provide a general framework for developing and implementing a Joint Plan.

A Joint Plan could **clearly delineate the respective roles of different institutions** tasked with responding to specific aspects of environmental emergencies. With the varying mandates and institutional considerations (including resources and expertise), a Joint Plan could improve the efficient use of resources. It could also reduce institutional conflicts and foster long-term cooperation among international organizations.

In addition to outlining the general responsibilities, the Joint Plan could articulate what the Joint Radiation Plan refers to as “**concepts of operation**” for particular situations. Accordingly, for each situation, the Joint Plan could define what the specific situation is; which international organizations should be involved and to what extent; and how to coordinate the different institutions, their expertise, and their agendas. This could be particularly useful for environmental emergencies, since this term is generally understood to cover a wide array of situations in which numerous different international organizations could be involved. Indeed, different concepts of operation could apply, for example, to industrial spills, oil spills, forest fires, earth quakes, and so forth, as different entities with different expertise would likely have varying roles depending on the particular nature of the emergency.

Ideally, the **scope** of the Joint Plan would include the full range of issues associated with responding to environmental emergencies. These would likely include: notice, advice, request for assistance, offer of assistance, provision of assistance, and receipt of assistance. As described in the Case Study, the Joint Radiation Plan provides for both advisory messages and notification, as well as provision of advice and assistance. The Joint Environmental Emergencies Plan should also address a wide range of settings: terrestrial, land-based impacts on the marine environment, marine, industrial accidents, complex emergencies, etc. The more complete the range of the issues and contexts addressed in the Joint Plan, the less likely there would be confusion.

As with the Joint Radiation Plan, the **Joint Environmental Emergency Plan should be developed iteratively**. For example, the JEU might initially bring together five or six key institutions and develop a basic framework. The Joint Plan would be reviewed and revised periodically. With time, other institutions could be integrated into subsequent iterations of the Joint Plan. Similarly, with subsequent iterations, it would be possible to address ambiguities or issues that may arise. The IAEA attempts to review and revise the Joint Radiation Plan every two years (or so); a Joint Environmental Emergency Plan could similarly undergo regular review and revision every two or three years.

This arrangement implies that a **specific institution would lead the development, review, and revision** of the Joint Plan. For the Joint Radiation Plan, the IAEA is the logical choice, in large part due to the formal mandate that the IAEA has through the Conventions on Notification and Assistance. The situation is not as clear for environmental emergencies. There is no overarching convention on environmental emergencies; instead, the frameworks are fragmented by region, emergency, and approach. Similarly, no one institution has a clear mandate to coordinate response to environmental emergencies.

Notwithstanding a clear mandate or overarching convention, the JEU would appear to be the logical choice of an institution to lead the development of a Joint Management Plan for Environmental Emergencies. Unlike most other institutions, the JEU is not constrained by a narrow mandate. As such, it could facilitate the development, review, and iterative revision of a Joint Management Plan. The legitimacy of the JEU in leading this process could be enhanced by securing a formal, broad political mandate to address environmental emergencies (see measure, below).

In drawing lessons learned from the Joint Radiation Plan coordinated by the IAEA, there is a key difference. The Convention on Assistance provides a clear mandate for the IAEA (and thus an implicit mandate for the IAEA to take the lead regarding the Joint Radiation Plan). The Convention also provides an **overarching framework** that starts the process of responding to a nuclear accident or radiological emergency. Under the Convention, a Party submits a request for assistance to the IAEA. Depending on the specific nature and context of the emergency, the IAEA then coordinates with other international organizations, as outlined in the Joint Radiation Plan. The Convention on Assistance thus provides a uniform point of entry into the system for responding to nuclear or radiological emergencies.

There is no similar uniform trigger for environmental emergencies. Accordingly, a State may make a request for assistance to any number of international organizations. This is not a significant problem: the Joint Plan could address how the relevant organizations share information regarding

requests for assistance that they receive. The Joint Plan should, however, clearly define what initiates actions under the Joint Plan.

In order for the Joint Plan to function effectively and efficiently without an overarching framework to act as a uniform trigger, there may be a need for **capacity building and awareness raising**, both within the respective institutions that are involved in the Joint Plan and, to the extent possible, of States who would be seeking assistance. Awareness raising is particularly important for States, so that they are aware of international assistance that is available.

As with the Joint Radiation Plan, the Joint Plan could **complement existing international frameworks**. It could build on existing plans, international frameworks, and ideas (including those articulated in UNGA Resolution 46/182); no new international framework is necessary. The Joint Environmental Emergency Plan would simply seek to make the different existing international frameworks operate more effectively through cooperation and coordination. As such, the Joint Plan could and should work within existing governance structures; to the extent possible, systems, procedures, and frameworks should be recognized by staff and decision makers in the key organizations. While the Joint Plan probably would not resolve all issues related to fragmentation, it could help to resolve ambiguities and areas of potential overlap, at least through an inter-agency administrative approach.

In developing a Joint Plan, it is important to consider the appropriate **level of detail**: should it be short, concise, and accessible? Or should it have sufficient detail in all the necessary aspects to provide clear direction? The Joint Radiation Plan seems to struggle with this tension. It provides a lot of detail, but not necessarily sufficient detail in all cases. For example, matters such as customs and immigration are not addressed. At the same time, there is a desire to keep the Plan readily accessible and practical. One option may be to have a short (say 10-20 page) Summary Joint Plan and a longer (200+ pages) Operational Joint Plan that provides all the necessary detail. The Summary Joint Plan could provide the basic framework and understanding, while the Operational Joint Plan could provide the details necessary to make it work on the ground.

Develop Guidance for Responding to Environmental Emergencies

Another priority is to develop, field test, finalize, and disseminate guidelines or other guidance on responding to environmental emergencies. These guidelines should be based on practice to date, building upon and scaling up effective approaches and avoiding or caveating approaches that experience has shown to be problematic.

Many guidelines already exist. These include guidelines on responding to natural disasters, civil-military assistance, and search and rescue, among other topics. This *Baseline Review* examined a number of these guidelines, including the IFRC Guidelines, Oslo Guidelines, and INSARAG Guidelines. The OPRC-HNS Technical Group has developed a wide array of guidance materials, addressing everything from contingency planning and combating oil pollution, to bioremediation and recovery of packaged dangerous goods at sea. UNEP has also developed a wide array of tools and guidance for environmental preparedness through its APELL (Awareness and Preparedness for Emergencies at Local Level) program. In addition, guidelines have been developed for some of the international frameworks analyzed, such as the Tampere Convention. Considering the existing guidelines, then, why would additional guidelines be warranted?

Existing guidelines are fragmented, each addressing different issues such as peacetime disaster relief, use of military and civil defense assets, and search and rescue. Sometimes, the guidelines overlap, and there are often gaps in the patchwork of guidelines. States that want guidance on responding to environmental emergencies need to sort through the different guidelines, determine how to address different approaches, and resolve gaps. Moreover, most of the guidelines focus on what countries should do to prepare for and respond to environmental emergencies at the national level; there is little guidance for how to coordinate response at the international level.

The fragmentation and gaps in the landscape of existing guidelines highlight a few particular needs for new guidelines. For example, guidance could assist in clarifying matters relating to notification and assistance by States, operation and coordination of international organizations, development of legal frameworks at the national and regional level. These are reviewed briefly.

Guidelines could specifically **address State engagement in international frameworks for responding to environmental emergencies**. Such guidelines could, for example, establish common procedures for notifying other states and international organizations of an environmental emergency, as well as requesting, offering, providing, and receiving assistance. These guidelines could build upon experience to date of the JEU. The approaches and experiences of the IAEA Conventions on Notification and Assistance, the Community Mechanism, and other frameworks could also be informative. While non-binding, such guidelines could help to standardize and streamline practice. They would also complement many of the existing guidelines – which tend to focus on national laws, institutions, and practices – by providing the larger picture of how States cooperate and communicate internationally.

Guidelines could address **operational arrangements of international organizations**. This could be in the form of inter-agency cooperation and coordination (as with the Joint Management Plan, discussed above), or it could set forth protocols and procedures for an agency (or agencies) in responding to environmental emergencies. This guidance could take the form of guidelines (e.g., Oslo Guidelines), a manual (e.g., IAEA's ENATOM and RANET), or other guidance. As with these experiences, the guidelines would be non-binding on States but would be intended for use by UN agencies and personnel. They may also be relevant to other actors, including States.

The INSARAG Guidelines offer a unique example of non-binding guidelines that provide operational guidance for coordinating response at the international level. Although the Guidelines focus on disaster response, experience to date with the Guidelines could inform the development of guidelines for responding to environmental emergencies. Both States and international organizations follow the Guidelines. States request assistance through the Virtual OSOCC, a website that facilitates information exchange between the affected country and responders. After the affected country prioritizes its needs in the request, other countries and international organizations post the assistance that they will offer. This system allows for efficient coordination of resources. In addition, the Guidelines address operational details such as entry and exit of assistance and the responsibilities of both the affected country and those countries or international organizations providing assistance. As a “living” document, the Guidelines are also continually reviewed and revised to incorporate lessons learned.

Guidelines could also provide **guidance to States and regional organizations** on a range of legal, institutional, and practical issues. What is the value added of a new set of guidelines oriented toward states and regional blocs, particularly in light of the 2007 IFRC guidelines? One clear advantage would be to **consolidate the procedures and standards for responding to environmental emergencies** from the varying guidelines in one document. Another value would be to extend the application of the guidelines to specific contexts that are not addressed, such as environmental emergencies arising from armed conflict, terrorism, and other complex emergencies. Another benefit would be to provide an overarching framework with the UN imprimatur. In pursuing this option, it may be advisable to consult and coordinate with the IFRC, which has significant expertise and experience from developing its 2007 Guidelines. In addition, guidance could address approaches, procedures, and considerations for transitioning from emergency response to early recovery.

In addition to guidelines, **a model or standardized Memorandum of Understanding (MOU) or agreement** could facilitate bilateral and regional agreements on emergency response. This would be particularly useful for neighboring countries, which frequently are best positioned to respond to an environmental emergency that exceeds the capacity of the affected country. Such a model MOU or generic agreement may be a stand-alone instrument, or it may be annexed to guidelines or another instrument, just as the Model Agreement was annexed to the Oslo Guidelines. An MOU could provide a standardized approach for States to follow when notifying others of an environmental emergency, requesting assistance, offering assistance, providing assistance, or receiving assistance.

While most of these guidance documents would be globally relevant, some of the guidance could facilitate the development and strengthening of regional systems for responding to environmental emergencies. This is discussed in further detail anon.

Develop and Implement a Certification System for Responding to Environmental Emergencies

Certification of individuals and teams for responding to environmental emergencies could facilitate the development of consistent capacity in responding to environmental emergencies. The certification could be for specific issues (e.g., water pollution, oil spills, air pollution, etc.), or it could encompass a broad “environmental emergencies” certification.

A certification system could draw upon experience to date in certifying Urban Search and Rescue (USAR) teams pursuant to INSARAG. Irrespective of their classification, all USAR teams contain management, logistics, search, rescue, and medical components. Beyond this basic structure, USAR teams are certified by level: light, medium, and heavy. When requested by the country’s National Focal Point, the INSARAG Secretariat arranges for the INSARAG External Classification (IEC) of international USAR teams. With external certification of USAR teams, numerous countries and NGOs have suddenly become very interested in being involved in INSARAG, and there has been an overflow of requests for certification.

The U.S. experience in certifying responders under the HAZWOPER (Hazardous Work Operations and Emergency Responses) system could also inform the development of a global system for certifying individuals in response to environmental emergencies. The HAZWOPER system addresses emergency response, as well as hazardous waste treatment, storage, and disposal.

While a certification system has many benefits, it may be premature as there are not yet consistent standards for assessing or certifying teams or individuals. Once guidance has been agreed upon (see measure, above), it may be appropriate to explore the feasibility and modalities for a certification system. At that time, it will also be necessary to consider how such teams are certified and by whom; the types of teams (or individuals) that may be certified; the nature of the certification (specialized and/or general); funding; and other related aspects.

There are also a number of other challenges. As yet, there are relatively few individuals who could be certified, let alone a team of individuals. As such, certification could restrict the roster of experts, rather than extend what is already a modest pool of resources. The diversity of environmental emergencies also creates difficulties, as there are different types of incidents (fire, explosion, gas release, liquid release, etc.), environments (in air, on land, in rivers or lakes, and at sea), and types and hazards of substances (toxic, corrosive, flammable, carcinogenic, etc.). Trying to certify people for such a broad range of environmental emergencies thus presents substantive challenges. It also presents administrative challenges, requiring institutional resources, capacity, and knowledge to certify.

Capacity Building and Awareness Raising Measures

Lack of capacity and awareness are two of the greatest challenges to effective response to environmental emergencies. In order to build capacity and awareness, the international community should:

- Strengthen regional systems for responding to environmental emergencies;
- Conduct training and raise awareness; and
- Institutionalizing technical assistance and capacity building.

These measures are all relatively straightforward to undertake, and the primary limiting factor is securing the necessary funding. These are discussed briefly below.

While the focus of this discussion – and the *Baseline Review* more generally – is on responding to environmental emergencies, capacity building and awareness raising can also address preparedness for environmental emergencies, thereby reducing the likelihood of a need to respond. Indeed, there appears to be a growing emphasis on proactive measures to build capacity to be better prepared for environmental emergencies, and not just to be better able to respond to them. Capacity building and awareness raising measures may address synergies between preparedness and response.

Strengthen Regional Systems for Responding to Environmental Emergencies

Regional governance structures are becoming increasingly sophisticated and effective in areas ranging from economic integration (relevant to the movement of personnel, equipment, and materials during environmental emergencies), to harmonization of environmental laws, to notification and provision of assistance in responding to health emergencies. In recent years, a growing number of regional bodies have developed and are attempting to implement arrangements that can respond to environmental emergencies. As with the global frameworks, these regional frameworks frequently address a broader or narrower range of issues than environmental emergencies. For example, CEPREDENAC focuses on humanitarian response to disasters, including environmental emergencies. Conversely, the UNECE Convention only covers environmental emergencies to the extent that they are caused by industrial accidents.

To date, the different regional frameworks have had varying degrees of success. Many of these are profiled in this *Baseline Review*. For example, the UNECE Convention has seen modest successes, particularly in providing technical assistance and building capacity of member states. The two ASEAN Agreements (on Disaster Management and on Haze) represent important measures in coordinating emergency response in Southeast Asia. Unfortunately, the Agreements have been largely ineffective to date due to vague wording, political desire to avoid confrontation by intruding on internal affairs of other countries (and a reciprocal expectation that other countries will not intrude on domestic governance), and lack of financial, technical, and institutional capacity to effectively implement the Agreements. The BSEC Agreement has many innovative provisions, although implementation has also proven difficult. For example, the BSEC Agreement addresses border-crossing procedure, clearly outlines the responsibilities of both the Requesting and Assisting Parties, simplifies customs inspection and control, and facilitates information exchange through the Liaison Officers established in the Additional Protocol. However, three of the signatories to the Agreement are not signatories to the Additional Protocol, and the Agreement has been rarely resorted to, despite opportunities that would have benefited from its application. Commentators attribute this ineffectiveness to a lack of political will in the field of emergency assistance. While a lack of political will often affects international instruments, its effect can be even greater for regional agreements, where there are fewer parties.

Considering the growing emphasis on regionalization in economic, political, and environmental matters, measures to strengthen regional frameworks for responding to environmental emergencies are particularly important. This importance is reinforced by the fact that there is a hierarchy of preferred responders: if an affected state can, it should respond to the environmental emergency; if it cannot, it first seeks assistance from its neighbors in the region; if that expertise is insufficient – or likely to be insufficient – the international frameworks come into play. Regional institutions are closer, may be able to respond more rapidly, and are more likely to be familiar with the local political, cultural, and other conditions.

Just as many of the institutions profiled in this *Baseline Review* provide technical assistance, capacity building, and guidance documents to States, institutions can focus their attention on building regional capacity. For example, **technical assistance** can assist regional bodies in developing and improving regional instruments (conventions, protocols, guidelines, MOUs, etc.) on environmental emergencies. Where there are difficulties in effectively implementing regional frameworks, international and bilateral institutions can foster a **dialogue** – for example through workshops – among States regarding obstacles and means of resolving barriers to implementation. **Capacity building** programs can target staff and officials in regional bodies on responding to environmental emergencies. These capacity building programs could address legal and institutional frameworks, as well as practical matters. International organizations can also work with regional institutions to develop and strengthen regional guidance documents, capacity-building programs, and technical assistance arrangements for States within the region.

These initiatives may utilize global materials or materials from other regions, adapting them to the particular regional context; alternatively, they may develop such materials de novo. As an example of global and regional cooperation and coordination, the IMO and UNEP support and backstop numerous regional arrangements, conventions, protocols, and centers established to address marine pollution (including oil and hazardous and noxious substances) in seas around the world. For example, through its Integrated Technical Cooperation Programme, IMO has supported many of regional processes by providing technical assistance and capacity building programs. The UNECE experience may also be informative, as the UNECE Secretariat assisted States in the region that needed assistance with implementation. In most instances, it can be efficient and effective to

reinforce existing frameworks and institutions, while also building bridges between the regional and global frameworks and institutions.

Strengthening regional systems should complement strengthening of international systems. In many instances, regional bodies provide an entry point for international response to environmental emergencies. The lack of an effective working relationship with regional bodies can make provision of assistance more difficult, as was witnessed with efforts to provide assistance to Myanmar following Cyclone Nargis. Politically, though, efforts to strengthen regional systems can sometimes be seen to reduce the need to strengthen international systems. This is misguided, at least in the context of environmental emergencies, where there is as yet no standard international set of procedures for notification and assistance.

Conduct Training and Raising Awareness

As Dr. Calvi-Pariseti noted in his 2007 paper for the AGEE, two of the most significant obstacles to responding effectively to environmental emergencies are a lack of awareness and capacity. While these issues are addressed in more detail under different Thematic Areas, a brief mention is merited here as capacity and awareness can have a profound impact on the effectiveness of international frameworks for responding to environmental emergencies.

The need is not only profound, it is broad. Capacity building and awareness raising could target various audiences, including:

- **UN staff, particularly the UN Resident Coordinators, UNDP Resident Representatives, and the Humanitarian Coordinators.** In many instances, these officials provide a critical role in working with the national Ministries to coordinate international response to an environmental emergency.
- **Diplomats,** particularly staff in the Ministries of Foreign Affairs. Diplomats often play an important role in communicating with international institutions on issues related to both notification and assistance.
- **Emergency responders and national authorities with mandates relating to environmental emergencies,** including national disaster management agencies and Ministries of Environment. Emergency responders, local and national government officials, and other authorities often do not have much training, if any, in responding to environmental emergencies. Training courses could particularly target emergency responders, for example when they receive training in emergency response including on the Flash Environmental Assessment Tool (FEAT).
- **Customs and immigration officials.** Customs and immigration officials have a central role to play in expediting the entry, transit, and exit of personnel, equipment, and supplies necessary to respond to environmental emergencies. Strengthening their awareness and capacity could build upon the Green Customs Initiative, which UNEP coordinates, with the active participation of the Secretariats of CITES, Montreal Protocol, Basel Convention, POPs/Stockholm Convention, PIC/Rotterdam Convention, Cartagena Protocol, and the Chemical Weapons Convention, as well as INTERPOL and the World Customs Organization. The Green Customs Initiative seeks to provide coordinated capacity building for customs officers for implementation of the relevant multilateral environmental agreements. The initiative could provide the basis for training customs officers on issues related to environmental emergencies, particularly with respect to the import, transit, export, and re-export of instruments, equipment, and materials (as well as the immigration and emigration of experts).
- **Environmental experts.** Capacity building of environmental experts, particularly regarding matters of emergency response, could broaden the pool of experts who are available. This could be particularly useful in building capacity to respond to environmental emergencies within a region. Capacity building could also be tied to certification efforts by building capacity of certified environmental emergency response experts.
- **Political officials.** Political officials, particularly at the level of Director Generals (i.e., one step below ministers), help to decide whether and how environmental emergencies will be addressed in national policy. Awareness raising and capacity building can help to ensure that they have access to the necessary information and ideas.

- **General public.** In most instances, the general public has very little knowledge about what to do to prepare for or act during environmental emergencies. Awareness raising programs – particularly those conducted domestically with international assistance – can greatly reduce the impact of a disaster. For example, following the 2004 Indian Ocean tsunami, some countries have been educating their citizens about where to go in the case of a subsequent tsunami.

These capacity building and awareness raising programs could build upon existing programs, utilizing materials, curricula, and trainers, such as the workshops that the JEU conducts on environmental emergency response. This may also be a way to address a key constraint for capacity building: funding. Rather than conduct capacity building through international workshops – which can be expensive, particularly factoring in travel, lodging, etc. – training could be undertaken domestically using faculty that have participated in Train-the-Trainer courses and using standardized materials that have been adapted to the particular national context. It may be possible to integrate such national training courses into the curricula of existing institutions charged with training future and existing professionals. Similarly, it could be integrated into other international trainings, for example those by UNDAC. To the extent that funds permit, international and regional training can be useful, particularly for networking: the people that are trained with could well be the individuals later seeking or providing assistance.

Considering the similarity between environmental emergencies and other disaster and emergency situations, it may also be possible to integrate modules on environmental emergency response into capacity building and awareness raising measures addressing emergency response more broadly.

Efforts to build capacity and raise awareness could build upon and support some of the other recommendations of this *Baseline Review*, including guidelines (which could provide the conceptual and substantive framework), strengthening regional governance systems, certifying teams or individuals, and establishing a center, as described below.

Institutionalizing Technical Assistance and Capacity Building

Another measure to strengthen capacity and effectiveness of international frameworks for responding to environmental emergencies is to establish a global center and/or a series of regional centers that provide technical assistance, raise awareness, and build capacity. This center or centers would be a combination of information clearinghouse, resource for technical assistance, and training center. This center could be a physical center and/or a virtual, on-line center.

This center could be a specific activity within an existing institution, such as the JEU – which already provides technical assistance and training courses, but would need to have a larger budget and staff to meet the demand and need for technical assistance and capacity building. Alternatively, it could be integrated into an external institution (such as a university) but operate in partnership with the JEU and international organizations. Such a center could expand upon existing capacity building programs that the JEU and other institutions currently conduct, and also provide technical assistance to countries seeking to establish effective procedures and institutions for notification, requests, offers, provision, and receipt of assistance.

The scope and operation of the center could be informed by initiatives under the UNECE Industrial Accidents Convention and the Basel Convention. The UNECE Assistance Programme provides technical assistance to some UNECE Member States that are not parties to the Convention. Although not through a formal “center,” UNECE does provide capacity building activities including workshops, training sessions, and exchange programs; technical advisory services for emergency preparedness and response, particularly in areas of need identified by fact-finding missions; and establishment of transboundary pilot projects and joint exercises.

Another possible approach is to decentralize resource centers. For example, the 1989 Basel Convention (on the Control of Transboundary Movement of Hazardous Wastes and their Disposal) utilizes a network of 14 Basel regional and coordinating centers (BCRCs) around the world. These regional coordinating centers build capacity, provide technical assistance, disseminate information, undertake pilot projects, and even facilitate technology transfer within the region. In most instances, the regional centers are hosted by existing in-region institutions with local staff; hence, it is not necessary to establish a wholly new institution. Thus, Basel Nigeria is hosted jointly by the Federal Ministry of Environment and the University of Ibadan, while the Pacific Regional Environment Program

hosts the South Pacific regional center in Samoa. The host countries fund the centers, which also receive project-related funding and voluntary contributions.

Depending on funding and political interest, establishing a center or series of centers could be undertaken in the short- or medium-term. In light of the current political climate that is not conducive to additional funding, one alternative could be to develop a center as a modest “virtual” center consisting of a senior professional and perhaps a junior professional officer. Such a virtual center could develop an on-line clearinghouse of information relating to environmental emergencies, provide technical assistance, and serve as faculty in training courses organized at the national or regional level. Another option would be to engage existing regional institutions as focal points for training specialists, development of rosters, and other activities. For example, the Global Fire Monitoring Center (GFMC) and the UNISDR Global Wildland Fire Network through the regional networks could partner with the JEU to strengthen capacity building in wildland fire disaster management, notably at regional levels.

Legal and Policy Measures

Thus far, the recommendations have focused on measures that the JEU, States, and other actors can undertake through operational reform, capacity building, awareness raising, and other activities. Indeed, these measures reflect the evolution of the JEU over more than a decade, largely through operational and training activities. Legal and policy frameworks establish the formal mandates, institutional arrangements, and operational frameworks that empower, guide, and facilitate.

Environmental emergencies as yet do not have the sort of legal and policy frameworks possessed by other environmental and humanitarian fields. This has not prevented the JEU from responding to environmental emergencies. It does, however, generate uncertainty about the long-term commitment of international institutions and States, as well as uncertainty in the precise mandate for responding to environmental emergencies. This uncertainty means that JEU staff spends time navigating politics and working through the uncertainties when that time could be better spent actually responding to the environmental emergency.

The framework governing response to environmental emergencies could be strengthened by initiatives to:

- Secure a political mandate for improving international environmental emergency governance systems; and
- Develop a new international legal instrument governing notification and response to environmental emergencies.

These options are discussed briefly below. The benefits and risks are discussed more fully below, but an initial comparison is worthwhile. Both measures could provide a clear mandate, which could assist in institutional coordination, development of guidance, and capacity building and awareness raising. Both could face political resistance, although in the current political climate a new international legal instrument would likely be much more difficult. Securing a political mandate from the UN General Assembly would likely be relatively cost-effective, while a significant commitment of funds would be necessary to convene the meetings to negotiate a new international agreement. One option would be to pursue legal and policy measures in parallel to the operational, capacity building, and awareness raising measures outlined above.

Secure a Political Mandate for Improving International Environmental Emergency Governance Systems

Politically and administratively, environmental emergencies occur at the intersection of the environmental and humanitarian worlds. As such, they are both environmental and humanitarian, yet in some ways neither. They may be perceived in the humanitarian world as environmental issues, and in the environmental world as a matter for humanitarian response and assistance. Or they may be claimed by both environmental and humanitarian institutions. The exchange of letters between UNEP and OCHA (then DHA) to establish and operate the JEU clearly illustrates the dual nature of environmental emergencies, as well as the benefits of bringing both environmental and humanitarian expertise to bear in responding to environmental emergencies.

International organizations working on environmental issues or on humanitarian issues generally have a clear and explicit mandate. Such a mandate can frequently be found in an international convention, but may alternatively be through a UN General Assembly Resolution. International organizations working on specific aspects of environmental emergencies have explicit mandates to work on other issues, but generally lack an explicit mandate on environmental emergencies. These include, for example, OCHA (which has mandates from UNGA Resolutions – particularly 46/182 – and specific international agreements), UNEP (UNGA Resolutions, specific multilateral environmental agreements or MEAs, and UNEP Governing Council Decisions), and various MEA secretariats.

The JEU is not a separate international organization, so it is not surprising that it does not have an explicit, direct mandate. However, it is surprising that OCHA and UNEP – from whom the JEU derives its authority and mandate – do not have an explicit global mandate on environmental emergencies. The various UNEP Governing Council Decisions that apply are important, but lack the status of a UN General Assembly Resolution or international convention, in which more States participate and which would apply clearly to other UN bodies. As noted above, the mandate for OCHA and UNEP to address environmental emergencies rises from their broad mandates on humanitarian and environmental issues respectively, rather than any globally applicable mandate specifically on environmental emergencies.

Perhaps due to the unusual nature of environmental emergencies, international law and policy to facilitate response to environmental emergencies has been characterized by piecemeal development – responding to specific threats and concerns – that creates a patchwork of conventions, guidelines, and institutions. The elements of this patchwork do not always fit neatly, leading to gaps and overlaps.

When there is a serious disaster entailing significant international coordination in responding to environmental emergencies (as well as to the broader humanitarian disaster) – as with the 2004 Indian Ocean tsunami – the response is often chaotic and inefficient due in no small part to the lack of established procedures for notification, requesting assistance, offering assistance, providing assistance, and receiving assistance. The lack of prior agreements make on-the-spot coordination among multiple bodies with different mandates, capacities, and agendas more difficult.

Similarly, experience over the past few years has shown gaps in the normative and institutional frameworks governing response to environmental emergencies, particularly relating to complex emergencies. For example, following the bombing of the Jiyeh power station in the 2006 Israel-Lebanon Conflict, which created a major oil spill, there was uncertainty as to which organizations had a mandate to respond. This gap was also highlighted in the oil spills that occurred in the 1990-91 Gulf War which saw a major ad hoc response effort, as well as civil wars in Sudan and Colombia, among others.

There is no overarching international legal instrument that sets forth responsibilities or mandates for international organizations to respond to environmental emergencies. Each institution has its own mandate, separately negotiated and separately administered. While the development of a Joint Management Plan (discussed above) could facilitate coordination among existing agencies, there is as yet no identifiable general mandate to respond to environmental emergencies.

The Joint Environment Unit, which has done a great deal to respond to environmental emergencies and to facilitate and coordinate response by States, has operated largely on a case-by-case basis. There are UNEP Governing Council Decisions [15/10 (1989), 18/19 (1995), 19/9 (1997), 20/8 (1999), 21/17 (2001), and 22/8 (2003)] and the general UNGA Resolution 44/244 (1989) and

Resolution 46/182 (1991) (on disaster response). However, Resolution 44/244 requested a report recommending measures to improve response to environmental emergencies; it did not provide a mandate for any particular institution to respond to environmental emergencies. Resolution 46/182 addresses disaster response generally. It was adopted two years before environmental emergencies emerged and three years before the launch of the JEU. As such, it does not address environmental emergencies explicitly, but implicitly incorporates them as a type of disaster. The UNEP Governing Council Decisions support the work of the JEU, but they do not provide an overarching mandate for the JEU, particularly vis-à-vis other UN organizations. Moreover, only 58 States are represented on the UNEP Governing Council, so it lacks the universal membership of the UN General Assembly and its Decisions lack the broad mandate of UNGA Resolutions.

A clear political mandate from the UN General Assembly – likely in the form of a new UNGA Resolution to both UNEP and OCHA – could provide a clear and invaluable touchstone for many of the measures proposed in this *Baseline Review*, including the development of a Joint Management Plan, guidance, capacity-building and awareness-raising measures, and a certification system for responding to environmental emergencies. The mandate could build upon Resolution 46/182, note the development of environmental emergencies as a new sub-field of humanitarian assistance, acknowledge experience to date in responding to environmental emergencies, endorse continued on-the-ground assistance, and request further strengthening of international and regional systems governing response to environmental emergencies. Due to the universal membership of the General Assembly, it is likely that such a resolution could also facilitate institutional coordination more effectively than could a similarly worded UNEP GC decision, even if it is not binding on States.

One obvious question would be whether the Resolution should focus on a particular institution, and if so which one. The JEU is essentially an administrative arrangement between UNEP and OCHA, not an independent institution. A Resolution more logically could address UNEP and OCHA, endorse the work that they have done together through the JEU, codify the administrative arrangement, and provide an explicit mandate to coordinate international efforts (or at least UN efforts) to respond to environmental emergencies while leaving the specific modalities subject to refinement and adjustment by UNEP and OCHA. The Resolution could also establish a new international organization, although that seems unlikely in the current political climate. It would seem to be more cost-effective to consolidate and strengthen the operation of the JEU than to establish a new entity.

There is some risk in pursuing a political mandate. While such a mandate could be quite helpful, it could also narrow the range of emergencies to which the JEU could respond. The flexibility that the Joint Environment Unit enjoys in responding to environmental emergencies of all sorts – including those arising from complex emergencies – could be constrained by the wording of an eventual UNGA Resolution. This is a potentially significant risk. A narrow wording could preclude the organic evolution of the scope of relevant environmental emergencies. Consider, for example, the example of Pakistan and land slides caused by the 2005 earthquake, discussed above. Might a narrowly or inartfully worded Resolution prevent the JEU from responding to an environmental emergency that is not explicitly described in the Resolution? Rather than addressing the specific emergencies on a case-by-case basis (as the JEU generally does), the UNGA might decide which specific emergencies OCHA and UNEP are empowered to address. Under such a scenario, it might be better to let the JEU, UNEP, and OCHA continue operating on a case-by-case basis. That said, the long and relatively successful track record of the JEU provides a broad range of different types of emergencies, as well as highlighting the importance of being able to respond promptly to potentially new challenges.

Develop a New International Legal Instrument

As noted above, environmental emergency response is one of the few environmental areas that operates without an overarching international convention or agreement. This means that there are no formal, binding requirements that apply globally for notification in the case of an industrial accident, in contrast to a nuclear accident. Similarly, there are no formally established arrangements for requesting, offering, providing, or receiving assistance in the event of an environmental emergency, again in contrast to nuclear accidents. The key institution coordinating response to environmental emergencies – the JEU – operates without the benefit of the international legal architecture that most other international institutions rely on for their mandates, funding, and direction.

It is noteworthy that, notwithstanding UN GA Resolution 46/182, there is also no broad international agreement governing broader emergency humanitarian assistance. As the experience with IFRC's International Disaster Response Laws (IDRL) project illustrates, the issue of an international instruments governing disaster response can be very sensitive politically. Many states do not appear to be ready for a binding international legal instrument governing response to disasters.

Should States seek to develop a new legal instrument on environmental emergencies, it could be a new convention, treaty, or other binding instrument or it could build upon an existing international instrument (for example, in the form of a protocol on environmental emergencies). Such an instrument could

- address institutional matters formally constituting a body or mandating a body to address environmental emergencies broadly defined;
- set forth standards, procedures, and other requirements regarding response to environmental emergencies; or
- some combination of administrative and normative provisions.

If a new international legal instrument is pursued, a threshold question will be the scope: should it focus on environmental emergencies or disasters more broadly (as with the EU legislation establishing the Community Mechanism)? If an international legal instrument were to focus on disasters more broadly, how would that affect potential political support for the initiative? Should there be a requirement for transboundary effects? Such a requirement would be problematic, as many of the environmental emergencies for which assistance is sought and for which the Joint Environment Unit provides assistance are purely domestic – in these instances, assistance is sought because domestic response capacity is insufficient to respond to the severity and breadth of the emergency. Should there be any substantive or geographic limitations? The legislation establishing the EU Mechanism provides for diverse and broad application. In considering the scope of an international instrument, one option would be to focus on the nature and effects of environmental emergencies, rather than the specific source or context of the emergency. Such an approach could retain flexibility to respond to a range of potentially unforeseen scenarios that produce the types of effects that States and international organizations in practice are compelled to respond to. It would also avoid the lengthy debates over which context or contexts should be excluded.

In addition, it may be worth considering provisions that facilitate ongoing review and improvement of the instrument. Many of the IMO conventions have such self-improvement provisions. Similarly, other international and regional frameworks are regularly reviewed, updated, and amended to learn from experiences. These include, for example, the Joint Radiation Plan, the IAEA's operating manuals (ENATOM and RANET), the Additional Protocol to the BSEC Agreement which calls on the Liaison Officers to meet at least once a year to consider trends and to identify new forms of cooperation, the INSARAG Guidelines which prides itself on being a "living document," and even the ASEAN Transboundary Haze Agreement (notwithstanding its other challenges).

While the current political climate is generally not conducive to the development of new international agreements, including on environmental emergencies, experience with the two IAEA conventions shows that political will can change rapidly in response to perceived needs. Negotiations for a convention on early notification and assistance in the event of a nuclear accident dragged on for years; negotiations on the two issues were even split in the hope that agreement could be reached on one if it was not tied to the other issue. To no avail. Then, the nuclear accident at Chernobyl occurred, and within a few months negotiations on the two conventions concluded and the treaties entered into force shortly thereafter. Rather than wait for the next major disaster, then, it is imperative to proactively develop an effective framework for notification and response.

Address Unresolved Issues

This *Baseline Review* highlights a variety of unresolved issues and gaps in existing international frameworks governing response to environmental emergencies. In many cases, these issues cut across the legal, capacity, and operational aspects of the governance frameworks. Many of these issues were also identified in Dr. Calvi-Pariseti's paper (and subsequently endorsed by the AGEE). These include:

- Governance gaps related to bringing **samples** into a country or transporting them through a transit state. Such samples are often important for identifying the severity of contamination and

the threat of pollution to people and the environment; but capacity to evaluate such samples in developing countries is often limited, so it is necessary to analyze the samples in developed country laboratories. The transport of samples that are potentially radioactive, biologically hazardous, or otherwise dangerous could create a diplomatic incident. Although this has not yet been an issue, addressing it proactively (for example, through the development of internationally accepted protocols) could avoid diplomatic incidents or a political backlash.

- There is no widespread agreement as to **what constitutes an “environmental emergency”**; indeed, it frequently is not defined. Where it is defined, the definition varies among the existing frameworks. Lack of clarity regarding the scope of the term can provide flexibility, but it can also generate uncertainty regarding mandates and authorities.
- Environmental emergencies during or arising from **war, armed conflict, terrorism, complex emergencies, or other hostilities**. This gap was highlighted by the response to the 2006 Israel-Lebanon Conflict, where assistance was provided, but not necessarily pursuant to an explicit mandate and there were questions regarding how to finance response, as IOPC Funds do not apply to acts of war. This ambiguity also led to different countries and international organizations laying claim to particular stretches of beach, causing clean-up to become patchwork and not contiguous. Response to the 1990-91 Gulf War also highlighted the gaps in the existing legal and institutional arrangements; and these gaps contributed to the proposals for a “Green Cross” in the early 1990s and to the precursor of the Joint Environment Unit. While it has not yet been an issue, international response to environmental emergencies arising from a serious terrorist attack is foreseeable but is not currently addressed under existing frameworks.
- Environmental emergencies arising from **land-based sources of marine pollution** are not necessarily covered by existing frameworks. This gap was highlighted in the response to the 2006 Israel-Lebanon Conflict, discussed above, as well as the 1990-91 Gulf War.
- **Institutional coordination**. While assessments and States frequently note the need to improve institutional coordination, the specific modalities for improving coordination are still being worked out. The Joint Plan represents one approach – and one that could inform efforts to improve coordination in responding to environmental emergencies – but there are likely other approaches that could also improve coordination; and
- Accidents that are **severe, but not necessarily transboundary**. For example, the IAEA Convention on Early Notification clearly applies only to nuclear accidents with actual or potential transboundary effects; the Convention on Assistance appears to apply in similar circumstances. In reservations entered upon their ratification of the Conventions, a number of countries expressed concerns about this limit to convention scope.

There are a number of measures that can be taken in the short-, medium-, and long-term to address these ambiguities, gaps, and weaknesses in the existing international frameworks. In many cases, **research and conceptual development** regarding potential arrangements to address specific issues is necessary. For a particular issue, it would be useful to know the specific existing legal and institutional context, where the gaps are, and measures that have been proposed or pursued to address the issue. Past practice can be particularly useful to the extent that particular approaches have been tried (or not tried) and lessons learned from those experiences.

Drawing upon the recommendations proposed through the research and conceptual development, it would be useful to **develop and pilot-test particular approaches**. This may be through the development of preliminary protocols for responding in specific instances. This may be, for example, in addressing land-based sources of marine pollution (working with the IMO and other institutions), or working with the World Customs Organization and a state or two on procedures for import, export, transit, and re-export of samples.

Based on the research and perhaps the experiences of pilot-testing the approaches, **guidance** on these specific issues could be quite useful. As this would likely be tentative and not based on extensive experience, provision should be made for reviewing and revising the guidance to take into account experiences and feedback. Finally, to realize broad change, it will be essential to integrate the new approaches into **capacity building** efforts.

Addressing all of these issues will take time, and it will need to be undertaken in a progressive manner particularly in light of the multiple priorities and limited resources. Accordingly, only some of the issues will start to be addressed in the short- and medium-term, with others needing to be addressed in the longer-term.

Moving Forward

This *Baseline Review* has highlighted the gaps and needs of the existing international frameworks governing response to environmental emergencies. Based on experiences with different frameworks, a number of recommendations have been proposed to strengthen international governance systems to respond to environmental emergencies.

In considering and pursuing the various options for next steps, there are often synergies among different measures. For example, guidelines can provide a framework for technical assistance, capacity building, certification, and awareness raising. They can also, in certain circumstances, provide a soft approach to the eventual development of international legal instruments. Moreover, there may be synergies with efforts to promote preparedness for environmental emergencies.

So, which of the options should be pursued first, say leading up to 2012, and which should be considered to be longer-term endeavors? The answer inevitably depends on who is making the recommendation. It depends in part on the political situation, but the political context can change rapidly, particularly in the wake of a disaster. This was evident, for example, following the accidents at Chernobyl and Bhopal. Similarly, financial constraints can change rapidly with the support of one or two key countries. The assessment of practical considerations can depend on the perspective and profession: educators may see training as a priority that is feasible, while lawyers may place a higher priority on fortifying the legal and policy frameworks.

As noted above, States and the JEU should consider whether and how to capitalize on the unique opportunity presented by global attention to environmental issues in 2012. There are a number of options for action to be taken in preparation for, during, and after the next global summit. For example, in the next four years, the AGEE, JEU, and partners may undertake specific measures designed to raise attention about environmental emergencies, consolidate standards and modalities for responding, and build international consensus regarding how to improve the international frameworks for responding to environmental emergencies. The summit could then be used as an opportunity to focus international attention, secure an endorsement (for example, of non-binding guidelines), and develop a broader platform (perhaps including specific goals in a political or implementation document) for responding to environmental emergencies. Depending on the political climate, the summit could also lay the foundation for developing a binding international instrument. As such, the summit could be an invaluable opportunity to broaden and motivate international support for responding to environmental emergencies beyond the AGEE.

Most immediately, the JEU should urge the AGEE to review this *Baseline Review* to determine which measures should be pursued on a priority basis. Such a dialogue would be important to bring multiple perspectives to bear when determining the way forward. It would also build political support and legitimacy for the decisions.

With the next AGEE meeting scheduled for 6-8 May 2009, there are a few measures that the JEU and interested States could undertake in the meantime. For example, the JEU could bring together a few members of the AGEE to start working on two or three measures, such as conceptualization of a Joint Plan for coordinating response to environmental emergencies. Alternatively – or in conjunction with working with AGEE members – the JEU could establish a Working Group to assess options for strengthening the international frameworks governing response to environmental emergencies. This Working Group could include high-level government officials (perhaps at the ministerial level) and experts who could provide guidance on both operational and political measures. Working through such a group could also build political support that would improve implementation and enhance the likelihood of success. Thus, if the Working Group decides that a political mandate is a priority, they could provide guidance regarding the scope and potential wording of the mandate, the appropriate venue for the mandate (e.g., UNGA, UNEP, ...), and how to secure it. They may even be able to assist in obtaining the mandate.

Another option would be to establish a steering mechanism under the AGEE that could help to review work that has been done after the Rosersberg and Tunis meetings, provide advice on what should be done in the next four years, and help to coordinate efforts. This steering mechanism could include a small number of countries representing different regions. Ideally, members of the steering mechanism would be experts with good political contacts and political skills interested in environmental emergencies. This steering mechanism could provide advice to the JEU and AGEE regarding all three Thematic Areas, and as such may be more broadly constituted than the Working Group mentioned above.

The 2009 AGEE meeting could then review the *Baseline Review* and the recommendations of the Working Group, and then determine the priority measures, the timing for the measures, who should undertake which measures, and how to ensure the availability of the necessary resources to implement the measures. The timing of the AGEE meeting provides an opportunity to undertake a few measures immediately, report on the progress, seek feedback from the AGEE on how to proceed, and chart a course to 2012 and beyond.

ANNEXES (ON CD-ROM)

- I. CITATIONS AND REFERENCES FOR THE BASELINE REVIEW**

- II. CASE STUDIES**

- III. OVERVIEW OF CONVENTIONS, GUIDELINES, AND OTHER INTERNATIONAL INSTRUMENTS**