Research Report | XXVII Annual Session

Environment Commission

Promoting international cooperation for environmental management in post disaster areas

MODEL UNITED NATIONS
THE INTERNATIONAL SCHOOL OF THE HAGUE

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Forum:	Environment Commission
Issue:	Promoting international cooperation for environmental management in post disaster areas
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Introduction

Disasters, whether natural or human induced phenomena cause them, have the capacity to disrupt communities and ecosystems and to leave affected areas in a situation of vulnerability, high susceptibility, and low resilience. Environmental management measures in post disasters areas has the goal to protect the environment, sustain development, reduce disaster risk, and adapt to or decrease the impact of future hazards. When it comes to the prevention and mitigation of such calamities, it is important to understand that there are bad practices and human activities, more specifically and more importantly climate change and the mismanagement of resources, which destabilize the environment and exacerbate the effects of hazards. Therefore, there is a need to ensure harmonious interactions between natural and human systems, as well as the need to find a way to cooperate to manage and protect resources that are valuable to us and to the upcoming generations. In fact, we should see international cooperation as a catalyser of environmental management and as the key to carry out sustainable reconstruction in post disaster areas.

Definition of Key Terms

International cooperation

The interaction and exchange of human and natural resources of international parties with a common aim or goal.

Environmental Management

There is no official definition of this term by the UN, however, in general, it refers to the management and control of human impact on the environment. More specifically, it aims at the preservation of natural resources and habitats.

Disaster

A sudden serious accident which disrupts the regular functioning of a community due to hazardous events and leading to human, material, economic and/or environmental losses. The hazards events can be classified as natural, anthropogenic, or socio-natural. Natural hazards are the result of a natural process, anthropogenic hazards (human-induced/man made hazards) are provoked entirely or predominantly by human activities and choices. Most of the times, hazards are socio-natural, as a combination of natural and anthropogenic factors induces them, including environmental degradation and climate change. It is important to note that the term disaster does not include the occurrence of armed conflicts and other situations of social instability which are subject to international humanitarian law and national legislation. However, some of the most serious disasters and emergencies are indeed created or further complicated by conflict and the forced movement of large numbers of people, therefore this element should not be overlooked.

Environmentally Induced Migration (EIM)

EIM is migration caused by environmental factors. Displaced individuals are often wrongfully referred as climate refugees, however there is no standard definition and no such category of refugees currently exist under international law.

Vulnerability

Vulnerability is the degree to which a population, individual or organization is unable to anticipate, cope with, resist and recover from the impacts of disasters (Blaikie et al.1994).

General Overview

Causes and effects of disasters

As previously stated, disasters are caused by the sudden disruption of the regular functioning of a society following a series of hazardous events. Hazardous events can be classified in five categories:

Biological hazards: of organic origin or transported by biological vectors. Examples include bacteria, viruses and mosquitoes carrying pathogenic agents.

Environmental hazards:

Of chemical, natural or biological nature and they are usually induced by environmental degradation and pollution.

Geophysical hazards:

Originating from internal processes of the Earth. Examples include earthquakes, volcanic activity, and landslides.

Hydro meteorological hazards:

Of atmospheric, hydrological, or oceanographic origin. Examples includes droughts, floods, typhoons, and hurricanes. These factors might also have an effect in other hazards such as landslides, wildfires, epidemics, and plagues.

Technological hazards:

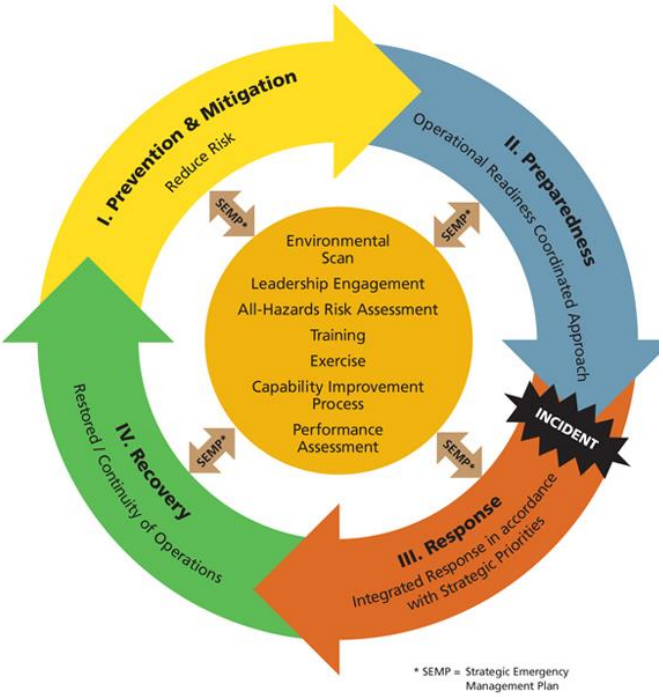
Originating from dangerous technological procedures, infrastructure failures, or human activities. Examples include chemical spills, dam failures and industrial pollution. These hazards often arise directly following a natural hazard (an example is the 2011 Fukushima Daiichi nuclear disaster in a Japanese power plant which was initiated primarily by the tsunami following the Tōhoku earthquake).

Because of their disruptive and catastrophic nature, disasters often provoke a chain reaction of calamities, making it difficult to predict and prevent such events. Furthermore, vulnerability to disaster rises following a calamitous event, making areas victims of a vicious cycle which is difficult to exit (see Appendix A). Additionally, there are a number of factors that increase the frequency and exacerbate the severity of disasters, as well as jeopardise reconstruction in post disaster areas. These include the mismanagement of natural resources and unsustainable human activities, urban and rural poverty and economic stagnation, political turmoil and social instability, and rapid population growth that results in unplanned settlements and rapid urbanization. Disasters and hazardous events have an enormous impact on us. This is because they do not only lead to significant human, material, economic and/or environmental losses but because they have long-term impacts on productivity, growth and economic stability that weaken systems which will be, then, more prone to future disasters and less likely to undergo recovery. One of the most immediate effect of a disaster is population displacement. As towns and ecosystems are destroyed, many have to abandon their homes and seek shelter both within and outside of national borders. The issue of environmental migration brings to the table a number of other factors such as the disruption of local public system and demographic structure of the country of origin, as well as a number of difficulties for the receiving country. Furthermore, disasters can lead to food scarcity and health services, as agricultural activities and basic infrastructures

are disrupted or destroyed. Food shortages and health issues can higher death tolls and contribute to further instability (see Appendix B).

Environmental management

In order to create a more stable situation, environmental management can be put in place in post disaster areas. The most effective tool of environmental management in post disaster areas is the disaster-management cycle. Environmental management and emergency management share many of the same concepts, issues, processes, and concerns, hence the application of the disaster management cycle represents the primary solution from an environmental point of view. This approach is divided in four primary areas: prevention and mitigation, preparedness, response and recovery. Some of the key features of environmental management through this cycle include:



Vulnerability assessment: its aim is to predict problems that specific groups will face in the event of a disaster or during the period of recovery

Prevention and mitigation:

This can be achieved through a number of measures such as moving groups at risk away from hazard-prone areas, providing protection from hazards, or preventing the hazard.

Emergency preparedness:

Long term development program to strengthen the overall capacity of a country to manage efficiently all types of emergency and promote a transition from recovery to development.

Emergency response:

The aims and methods of this step depend on the nature of the emergency or disaster however, it is also conditioned by the preparedness achieved in the previous steps.

Reconstruction and recovery:

Following an immediate response to bring an emergency under control, undertaking reconstruction and recovery activities from environmental, structural, social, and economic perspectives is the fundamental way to rehabilitate the systems disrupted by disasters.

In general, other important aspects of environmental management in post disaster areas include an approach to policy making with the mindset of environmental governance and integrated sustainable planning (for example by implementing more protected areas, increase ecosystem restoration, and ensure an expert management of natural resource). Furthermore, governments and organisations are required to ensure that there is more environmental education and communication, especially in disaster prone areas.

International cooperation

International cooperation is a fundamental aspect of management in post disaster areas because of a number of factors. Firstly, hazards and disasters to not limit themselves to national borders. Especially in the case of natural disasters, hazards can harm populations and the environment spreads across communities, regions, and nations, and consequently so should the measures to prevent and mitigate them. By creating a multilateral framework involving the cooperation and the resources of all members, it is possible to create a quick and effective response system, as well as a carefully assessed emergency preparedness plan. Furthermore, the effects of one single disaster in one specific area of the world can still have indirect repercussions on a global scale. The effects can involve the environment and the availability of resources, but also on an economic and political scale. Because of interdependence and globalisation, our world as progressively become more dependent on the wellbeing of individual areas. Therefore, stability should be achieved and fostered also by ensuring that individual Member States can thrive even in post disaster times.

Major Parties Involved

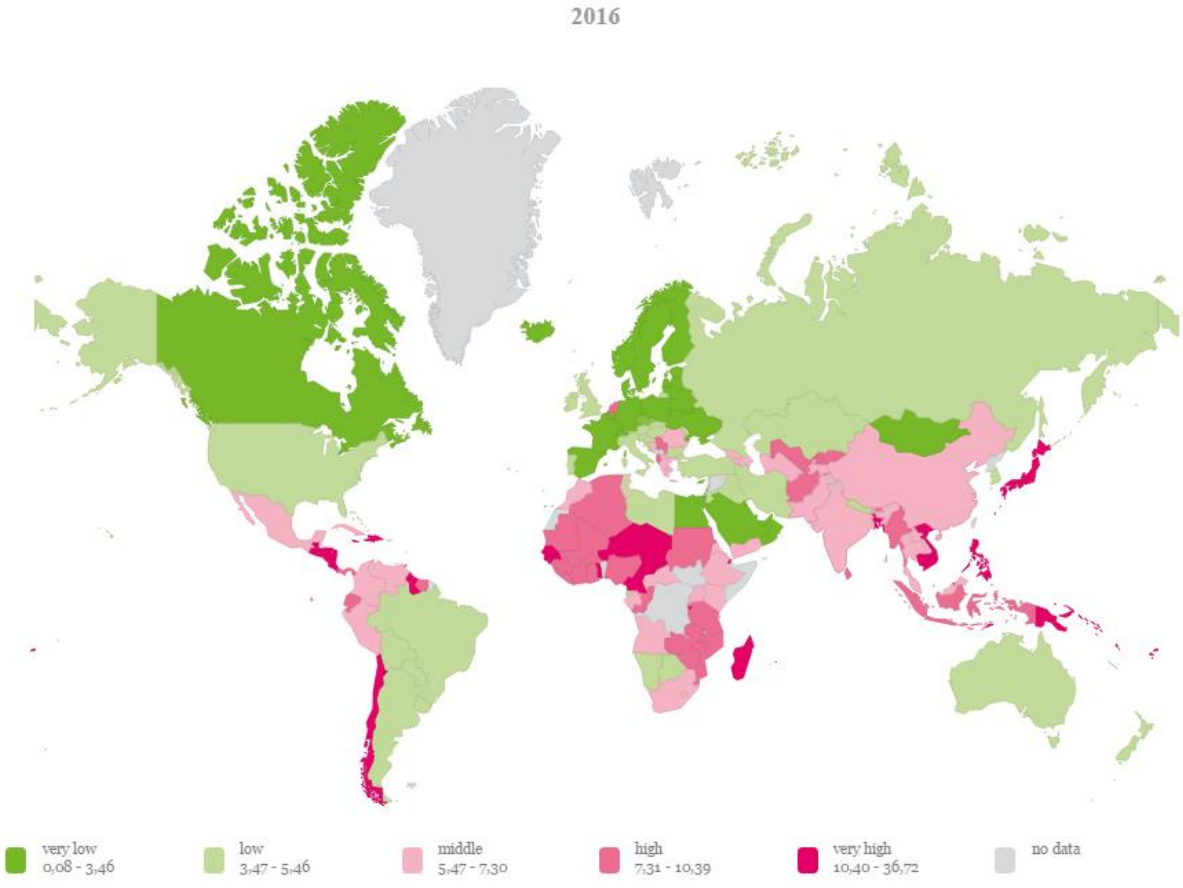
United Nations Environment Programme (UNEP)

The United Nations Environmental Programme is an agency pert of the UN which coordinates environmental actions and implements sustainable environmental policies through its four core services: post-crisis environmental assessment, post-crisis environmental recovery, environmental cooperation for peacebuilding and disaster risk reduction. Founded in June 1972 as a result of the United Nations Conference on the Human Environment (Stockholm Conference), it has been working with communities, privates and

governmental organisations to achieve a number of objectives, including environmental management in post disaster areas. UNEP was, for example, involved in projects of recovery in Haiti following the devastating earthquake of 2010.

Vanuatu

Officially the Republic of Vanuatu, Vanuatu is a Pacific island nation in South Pacific Ocean. The archipelago comprises more than 80 islands and it is considered the nation most vulnerable to natural disasters according to the 2015 World Risk Report. Because of its geological features, Vanuatu is susceptible to volcanic eruptions, earth quakes, tsunami and landslides and its position results in El Nino and la Nina weather pattern (as well as a lengthy cyclone season) which increase the risk of droughts and floods. A big part of the countries believed to have high vulnerability to natural disasters are either island nations (just like Vanuatu) such as Tonga and Philippines, or costal ones such as Costa Rica, El Salvador and Guinea Bissau.



Timeline of Key Events

Date	Description of Event

1 January 1990	The GA proclaims the International Decade for Natural Disaster Reduction
May 1994	First World Conference on Natural Disasters in Yokohama
January 2000	GA endorses the proposal to establish an inter-agency task force and inter-agency-secretariat for disaster
January 2005	Second World Conference on Disaster Reduction in Kobe
March 2015	Third UN World Conference on Disaster Risk Reduction (WCDRR) in Sendai

UN involvement, Relevant Resolutions, Treaties and Events

The UN, and most notably, the UN Environmental Programme, has been involved in the issue by responding to crisis situations and delivering environmental expertise. Its work with communities, privates and governmental organisations shows the UN commitment to environmental management.

- International Decade for Natural Disaster Reduction, 22 December 1989 (A/RES/44/236)
- International Strategy for Disaster Reduction, 14 January 2014, (A/RES/69/219)
- First, second and third UN World Conference on Disaster Risk Reduction (WCDRR)

Previous Attempts to Resolve the Issue

Several steps have been taken to ensure the rehabilitation of post conflict areas through environmental strategies, as well as to promote a system of international cooperation to do so. The above-mentioned conferences and the policies adopted afterwards are all examples of solution to this issue. Furthermore, different organs of the United Nations have worked on the problem from several points of view. Most importantly, the UN Environmental Programme has tackled the issue through, for example, executive branches such as the Environment Post-Conflict and Disaster Management Branch or the UNEP's Disasters and Conflicts Programme. These intergovernmental organisations and activities revolve around four core services which are post-crisis environmental assessments, post-crisis environmental recovery, environmental cooperation for peacebuilding, and disaster risk reduction. These pillars are derived from the already mentioned disaster management cycle which has proven to be successful in its variations and adaptations.

Possible Solutions

It is clear that when it comes to the level of information and methods to achieve environmental management in post disaster areas, there is enough to work with. However, what is lacking is a comprehensive multisector legal framework that promotes international cooperation on the topic.

Possible solutions, therefore include a redesign of national and international legislation and policy that allows for collaboration across borders. This comprises new common plans for disaster management and coordination of emergency response at international, national, and subnational levels, as well as consolidating efforts to establish stocks of relief supplies and equipment readily available for all Members. The implementation of these solution would have to happen from efforts of governments and international organisations. The plans for disaster management should include specific solutions depending on the region where they are applied and they should come from consultation with experts in the issue. Examples of these solutions include a reformed system of task force type of response to emergencies which is made up pf trained teams of both civilians and military personnel specialised on the type of most recurring disaster. The redesign of legislation should be monitored by competent UN bodies such as the UNEP and WHO, and perhaps new special legal subcommittees should be constructed to aid administrations in transitioning to more effective environmental management strategies.

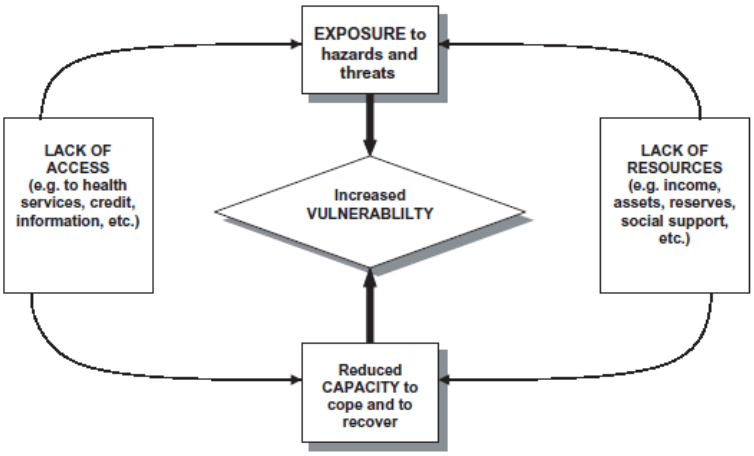
Furthermore, it is important to stress the importance of education, awareness and community participation environmental management and post disaster reconstruction, as well as an accessible way to collect and circulate information regarding disasters on an international scale.

Appendices

Appendix A

From the Environmental health in emergencies and disaster practical guide by B. Wisner and J. Adams.

Figure. 2.1 Disaster vulnerability as a function of exposure to hazards and threats, and reduced capacity to cope and recover



Appendix B

From the Environmental health in emergencies and disaster practical guide by B. Wisner and J. Adams.

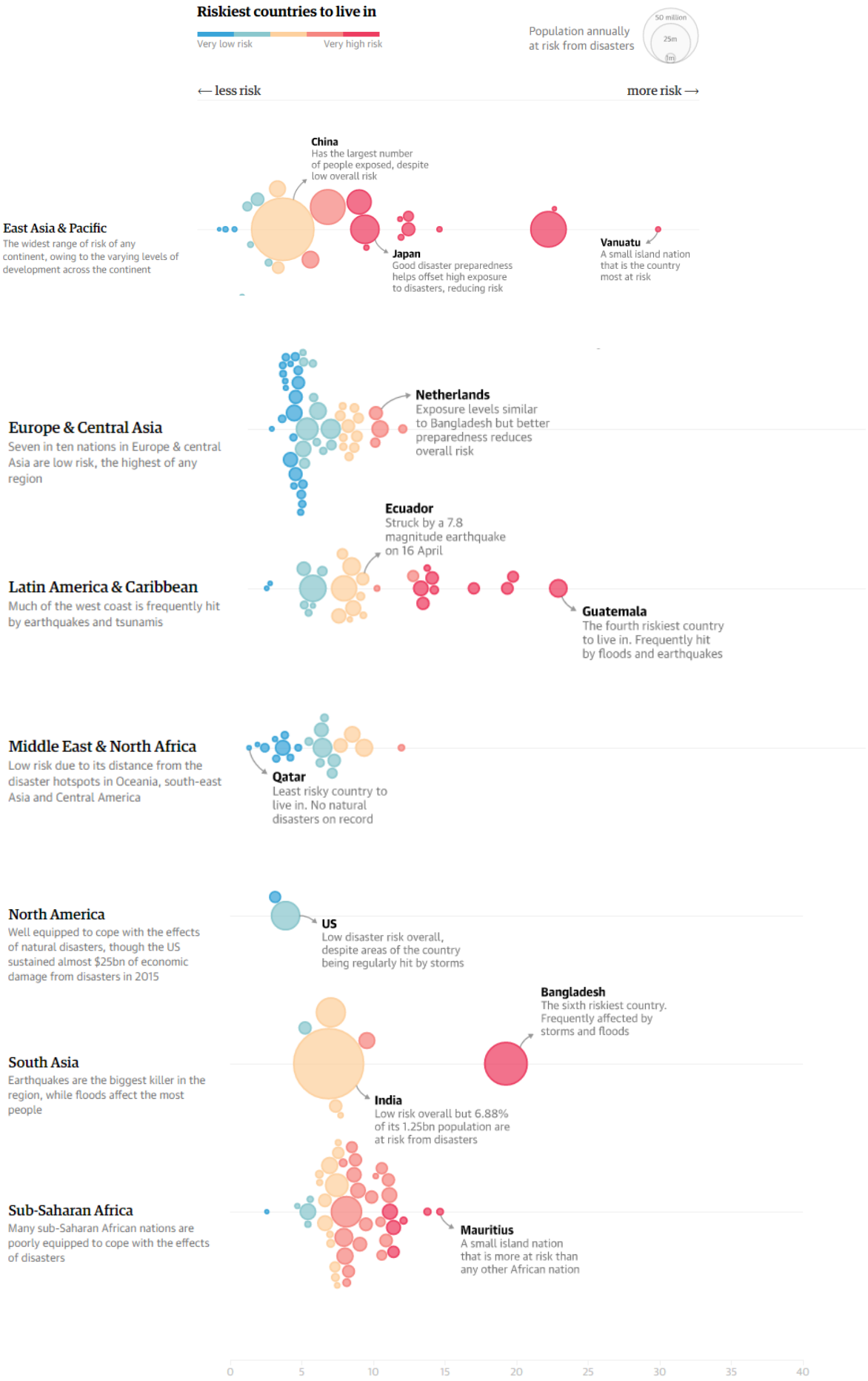
Table 2.1 **Common levels of impact of natural disasters on environmental health services**[1]

	Most common effects on environmental health	Earthquake	Cyclone	Flood	Tsunami	Volcanic eruption
Water supply and wastewater disposal	Damage to civil engineering structures	1	1	1	3	1
	Broken mains	1	2	2	1	1
	Damage to water sources	1	2	2	3	1
	Power outages	1	1	2	2	1
	Contamination (biological or chemical)	2	1	1	1	1
	Transportation failures	1	1	1	2	1
	Personnel shortages	1	2	2	3	1
	System overload (due to population shifts)	3	1	1	3	1
	Equipment, parts, and supply shortages	1	1	1	2	1
Solid waste handling	Damage to civil engineering structures	1	2	2	3	1
	Transportation failures	1	1	1	2	1
	Equipment shortages	1	1	1	2	1
	Personnel shortages	1	1	1	3	1
	Water, soil, and air pollution	1	1	1	2	1
Food handling	Spoilage of refrigerated foods	1	1	2	2	1
	Damage to food preparation facilities	1	1	2	3	1
	Transportation failures	1	1	1	2	1
	Power outages	1	1	1	3	1
	Flooding of facilities	3	1	1	1	3
	Contamination/degradation of relief supplies	2	1	1	2	1
Vector control	Proliferation of vector breeding sites	1	1	1	1	3
	Increase in human/vector contacts	1	1	1	2	1
	Disruption of vector-borne disease control programmes	1	1	1	1	1
Home sanitation	Destruction or damage to structures	1	1	1	1	1
	Contamination of water and food	2	2	1	2	1
	Disruption of power, heating fuel, water supply or waste disposal services	1	1	1	2	1
	Overcrowding	3	3	3	3	2

[1] Source: Pan American Health Organization (2000).
1 - Severe possible effect.
2 - Less severe possible effect.
3 - Least or no possible effect.

Appendix C

Holder, Josh. "Where Is The Riskiest Place To Live?". *the Guardian*. N.p., 2017. Web. 15 June 2017.


Riskiest countries to live in
Very low risk
Very high risk
Population annually at risk from disasters
50 million
25m
1m
← less risk
more risk →
East Asia & Pacific
The widest range of risk of any continent, owing to the varying levels of development across the continent
China
Has the largest number of people exposed, despite low overall risk
Japan
Good disaster preparedness helps offset high exposure to disasters, reducing risk
Vanuatu
A small island nation that is the country most at risk
Europe & Central Asia
Seven in ten nations in Europe & central Asia are low risk, the highest of any region
Netherlands
Exposure levels similar to Bangladesh but better preparedness reduces overall risk
Latin America & Caribbean
Much of the west coast is frequently hit by earthquakes and tsunamis
Ecuador
Struck by a 7.8 magnitude earthquake on 16 April
Guatemala
The fourth riskiest country to live in. Frequently hit by floods and earthquakes
Middle East & North Africa
Low risk due to its distance from the disaster hotspots in Oceania, south-east Asia and Central America
Qatar
Least risky country to live in. No natural disasters on record
North America
Well equipped to cope with the effects of natural disasters, though the US sustained almost $25bn of economic damage from disasters in 2015
US
Low disaster risk overall, despite areas of the country being regularly hit by storms
South Asia
Earthquakes are the biggest killer in the region, while floods affect the most people
Bangladesh
The sixth riskiest country. Frequently affected by storms and floods
India
Low risk overall but 6.88% of its 1.25bn population are at risk from disasters
Sub-Saharan Africa
Many sub-Saharan African nations are poorly equipped to cope with the effects of disasters
Mauritius
A small island nation that is more at risk than any other African nation
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Further reading: http://weltrisikobericht.de/english/

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Image 2: "Worldriskreport 2016 E Neu - Weltrisikobericht". *WeltRisikoBericht*. N.p., 2017. Web. 15 June 2017. Avaiable at: http://weltrisikobericht.de/english/

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