BRIEFING PAPER

# GLOBAL CLIMATE RISK INDEX 2012

## WHO SUFFERS MOST FROM EXTREME WEATHER EVENTS? WEATHER-RELATED LOSS EVENTS IN 2010 AND 1991 TO 2010

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## Summary

As in previous years, the Global Climate Risk Index 2012 analyses to what extent countries have been affected by the impacts of weather-related loss events (storms, floods, heat waves etc.). The most recent available data from 2010 as well as for the period 1991-2010 were taken into account.

Most affected countries in 2010 were Pakistan, Guatemala, Colombia and Russia. For the period 1991 to 2010, Bangladesh, Myanmar and Honduras rank highest.

This year´s analysis underlines that less developed countries are generally more affected than industrialised countries, according to the Climate Risk Index. With regard to future climate change, the Climate Risk Index can serve as a warning signal indicating past vulnerability which may further increase in regions where extreme events will become more frequent or more severe through climate change. While some vulnerable developing countries are frequently hit by extreme events, there are also some where such disasters are a rarity.

In Cancún at COP16 an Adaptation Framework was adopted in order to secure an institutional and financial support for vulnerable countries. The climate summit in Durban (COP17) will have to make substantial steps in order to further put into action the initiated processes and to scale-up adaptation.


## Imprint


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## Contents



# How to read the Global Climate Risk Index

The Germanwatch Global Climate Risk Index is an analysis based on the most reliable available data on the impacts of extreme weather events and associated socio-economic data. The Germanwatch Climate Risk Index 2012 is the 7th edition of the annual analysis. It represents one important piece in the overall, more comprehensive puzzle of climate-related impacts and associated vulnerabilities: for example, it does not take into account other important aspects such as sea-level rise, glacier melting or more acid and warmer seas. It is based on past data and should not be used for a linear projection of future climate impacts. Also, it is important to note that a single extreme event can - because of methodological reasons - not be traced back solely to anthropogenic climate change. Nevertheless, climate change is an increasingly important factor for changing the odds of occurrence and intensity of these events.

The Climate Risk Index thus indicates a level of exposure and vulnerability to extreme events which countries should see as a warning signal to prepare for more frequent or more severe events in the future. The limitations to the data availability, including the socio-economic data, means that the analysis does not encompass some very small countries such as certain small island states, since in particular in a longer-term comparison, sufficiently sound data is not always available. Furthermore the data only reflects the *direct* impacts (direct losses and fatalities) of extreme weather events, while heat waves for example often lead to much stronger *indirect* impacts (e.g. through droughts and food scarcity) which is often the case in African countries. Also, it does not include the total number of affected people (in addition to the fatal casualties), since the comparability of such data is very limited.

# Key messages

- According to the Germanwatch Global Climate Risk Index, Bangladesh, Myanmar and Honduras were the countries most affected by extreme weather events from 1991 to 2010;
- All of the ten most affected countries (1991-2010) were developing countries in the low-income or lower-middle income country group;
- In total, more than 710,000 people died as a direct consequence of more than 14,000 extreme weather events, and losses of more than 2.3 trillion USD (in PPP) occurred from 1991 to 2010 (USD 1.5 trillion overall losses in original values);
- In 2010, the ranking of the most affected countries is led by Pakistan, Guatemala, Colombia, Russia and Honduras;
- In the case of the Russian heatwave some scientists see a high probability that without climate change this event would not have occurred;
- Loss and damage from anthropogenic climate change is expected to further increase; therefore, the current lack of ambition in mitigation putting the world on a path of 4 to 5°C increase in average temperature would result in a large-scale experiment unprecedented in the history of mankind;
- Many developing countries are already taking action to prepare for climate-related disasters and to promote as well as implement adaptation. However, adequate financial and institutional support provided by developed countries is required to further increase disaster preparedness and resilience of poor countries. Operationalising the Green Climate Fund at COP17 in Durban could be one important step to build up long-term support.
- Through the adoption of the Cancún Adaptation Framework (CAF) at COP16, an important step was made by Parties to the UNFCCC for a more ambitious and coherent approach to adaptation. The CAF also contained the decision on a work programme on loss and damage from the adverse impacts of climate change. For COP17 in Durban, it is crucial to define the concrete next steps with a view to reaching a more comprehensive and ambitious decision at COP18.

# 1 Key results of the Global Climate Risk Index 2012

People all over the world have to face the reality of climate variability. More than 710,000 people died as a direct consequence of more than 14,000 extreme weather events, and losses of more than USD 2.3 trillion (in PPP) occurred from 1991 to 2010 globally.

The recently published Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX) prepared by the Intergovernmental Panel on Climate Change has highlighted the risks of extreme events as well as options to prepare for these. It also made clear that extreme events and its impacts happen in a complex "interaction of climatic, environmental, and human factors that can lead to impacts and disasters".[1]

The science behind extreme events and the role of climate change as a cause remains complex, but some key messages from the IPCC report include the following[2]:

- A changing climate leads to changes in the frequency, intensity, spatial extent, duration, and timing of extreme weather and climate events, and can result in unprecedented extreme weather and climate events;
- It is likely that the frequency of heavy precipitation or the proportion of total rainfall from heavy falls will increase in the 21st century over many areas of the globe;
- With high confidence, exposure and vulnerability are dynamic, varying across temporal and spatial scales, and depend on economic, social, geographic, demographic, cultural, institutional, governance, and environmental factors;
- Extreme events will have greater impacts on sectors with closer links to climate, such as water, agriculture and food security, forestry, health, and tourism.

The **Global Climate Risk Index (CRI) developed by Germanwatch** analyses the quantified impacts of extreme weather events[3] - both in terms of fatalities as well as economic losses that occurred - based on data from Munich Re NatCatSERVICE which is world wide one of the most reliable and complete data bases on this matter. The CRI looks both at absolute and relative impacts, and results in an average ranking of countries in four indicators, with a stronger weighting of the relative indicators. The countries ranking highest are the ones most impacted and should see the CRI as a "warning signal" that they are at risk either from frequent events or rare, but extraordinary catastrophes.

[1] IPCC, 2011: IPCC SREX Summary for Policymakers. www.ipcc.ch
[2] See IPCC, 2011
[3] Meteorological events such as tropical storms, winter storms, severe weather, hail, tornado, local storms; hydrological events such as storm surges, river floods, flash floods, mass movement (landslide); climatological events such as freeze, wildland fires, droughts

The Climate Risk Index does not provide an all-encompassing analysis of the risks from anthropogenic climate change to countries, but should be seen as one analysis informing countries´ exposure and vulnerability to climate-related risks along with other analyses[4], based on the most reliable quantified data. It is of course influenced by the current and past climate variability and to the extent that climate change has already left its footprint in the climate variability of the last 20 years also on climate change. However, tracing and identifying the climate change footprint is extremely complex and cannot be dealt with here in more detail.

## Countries most affected in the period of 1991-2010

**Bangladesh, Myanmar and Honduras** have been identified to be the most affected in this 20-year period.[5] They are followed by **Nicaragua, Haiti, Viet Nam and the Dominican Republic**. Table 1 shows the ten most affected countries (Down 10) of the last two decades, with their average, weighted ranking (CRI score) and the specific results in the four indicators analysed. There are only slight changes compared to the analyses presented in the CRI 2011 which looked at the period from 1990 to 2009.

**Table 1: The Long-Term Climate Risk Index (CRI): Results (annual averages) in specific indicators in the 10 countries most affected in 1991 to 2010.**

| **CRI 1991-2010** (1990-2009) | **Country** | **CRI score** | Death toll | Deaths per 100,000 inhabitants | Total losses in million US$ PPP | Losses per unit GDP in % | Number of Events (total 1991-2010) |
|---|---|---|---|---|---|---|---|
| **1** (1) | Bangladesh | 8.17 | 7,814 | 5.51 | 2,091 | 1.56 | 251 |
| **2** (2) | Myanmar | 10.50 | 7,130 | 14.06 | 659 | 1.68 | 33 |
| **3** (3) | Honduras | 11.67 | 327 | 5.05 | 662 | 2.93 | 56 |
| **4** (4) | Nicaragua | 18.00 | 159 | 2.83 | 212 | 1.90 | 43 |
| **5** (6) | Haiti | 21.17 | 340 | 3.95 | 155 | 1.12 | 51 |
| **6** (5) | Viet Nam | 21.50 | 445 | 0.57 | 1,809 | 1.19 | 40 |
| **7** (8) | Dominican Republic | 30.50 | 211 | 2.51 | 181 | 0.37 | 44 |
| **8** (37) | Pakistan | 30.67 | 558 | 0.40 | 1,834 | 0.66 | 144 |
| **9 (-)** | Korea, DPR | 30.83 | 74 | 0.33 | 1,172 | 3.61 | 33 |
| **10** (7) | Philippines | 31.83 | 801 | 1.03 | 660 | 0.30 | 270 |

Among the ten countries most affected, there is not one developed or Annex-I country, among the first 20 there is only one developed country (Russia only as a consequence of the extreme heat weave in 2010). Particularly in relative terms, poorer developing countries are hit much harder. These results underscore the particular vulnerability of

[4] See e.g. analyses of Columbia University: http://ciesin.columbia.edu/data/climate/, Maplecroft´s Climate Change Vulnerability Index: http://www.maplecroft.com/about/news/ccvi.html
[5] The full rankings can be found in the Annexes.

poor countries to climatic risks, despite the fact that the absolute monetary damages are much higher in richer countries. In addition, one has to acknowledge that affected developing countries are among the poorer developing countries, least responsible for causing climate change.

## Countries most affected in 2010

**Pakistan, Guatemala and Colombia** have been identified to be the most affected countries last year.[6] They are followed by **Russia, Honduras and Oman**. Table 2 shows the ten most affected countries (Down 10), with their average, weighted ranking (CRI score) and the specific results in the four indicators analysed.

**Table 2: The Climate Risk Index for 2010: the 10 most affected countries**

| Ranking 2010 (2009) | Country | CRI score | Death toll | Deaths per 100,000 inhabitants | Absolute losses (in million US$ PPP) | Losses per unit GDP in % | Human Development Index[7] |
|---|---|---|---|---|---|---|---|
| **1 (68)** | Pakistan | 3.50 | 1,891 | 1.10 | 25,316 | 5.42 | 145 |
| **2 (53)** | Guatemala | 6.33 | 229 | 1.59 | 1,969 | 2.80 | 131 |
| **3 (100)** | Colombia | 8.00 | 320 | 0.70 | 7,544 | 1.73 | 87 |
| **4 (75)** | Russia | 11.00 | 56,165 | 39.30 | 5,537 | 0.25 | 66 |
| **5 (65)** | Honduras | 14.67 | 139 | 1.73 | 220 | 0.65 | 121 |
| **6 (88)** | Oman | 17.00 | 24 | 0.81 | 1,314 | 1.73 | 89 |
| **7 (14)** | Poland | 17.83 | 151 | 0.40 | 4,745 | 0.66 | 39 |
| **8 (93)** | Portugal | 19.67 | 47 | 0.44 | 1,749 | 0.71 | 41 |
| **9 (23)** | China | 23.50 | 2,889 | 0.22 | 33,395 | 0.33 | 101 |
| **10 (38)** | Tajikistan | 24.17 | 27 | 0.35 | 262 | 1.77 | 127 |

Honduras (primarily hurricanes), China (various extreme events, but in particular floodings) and also Guatemala (hurricanes) have appeared several times among the most affected countries. Extraordinary events occurred in Pakistan (flooding), Colombia (flooding), Russia (heat wave) and Oman (flooding) which caused the high ranking of these countries. Also the appearance of Poland (flooding) and Portugal (flooding) is quite unusual.

Although Pakistan had to get used to extreme weather events in the last years, in 2010 it was hit by the worst floods of its history. During the monsoon season, Pakistan experienced huge floods in 84 of 121 districts killing more than 1700 people.

In July 2010 a heat wave in Russia caused massive damage through forest and peat fires. It was the hottest month ever recorded with meteorological data in Moscow. The

[6] The full rankings can be found in the Annexes.
[7] UNDP, 2011: Human Development Report, http://hdr.undp.org/en/statistics/hdi/

heatwave caused more than 55,000 fatalities, according to the statistics. The Russian heatwave has been one of the few extreme events where researchers have identified a strong indication that climate change has been a key driver of its appearance:

"The Moscow heat wave last year was, with high probability, the result of climate change – contrary to what some have assumed. With a likelihood of 80 percent, it was not natural short-term climatic variability but the long-term warming trend that caused the temperature record in the region surrounding the Russian capital in July 2010".[8]

**Exceptional catastrophes or continuous threats?**

The Global Climate Risk Index for 1991 to 2010 is based on average figures of twenty years. However, there are two groups of countries among the Down 10: those who are continuously affected by extreme events, and those that only rank high because of exceptional catastrophes. Two examples for the latter case are Myanmar, where more than 95% of the damages and fatalities occurred in 2008 through cyclone Nargis, and Honduras, where more than 80% in both categories were caused through Hurricane Mitch in 1998.

Similarly, the appearance of some European countries among the first 30 countries is almost exclusively because of the extraordinary number of fatalities due to the 2003 heat wave, in which more than 70,000 people died across Europe. Although some of them are often hit by extreme events, usually the losses and fatalities are relatively minor compared to the countries´ population and economic power. The most recent example is Russia.

While in Bangladesh more than 80% of the deaths occurred in 1991, the country is continuously hit by extreme events and the fact that no further peak catastrophe caused so much hardship (140,000 people died in that of 1991) can be seen as a partial proof that it is possible to better prepare for climate risks and prevent larger-scale impacts from disasters.

[8] See www.pik-potsdam.de and Rahmstorf, S., Coumou, D. (2011): Increase of extreme events in a warming world. Proceedings of the National Academy of Sciences (early edition), [doi:10.1073/pnas.1101766108]

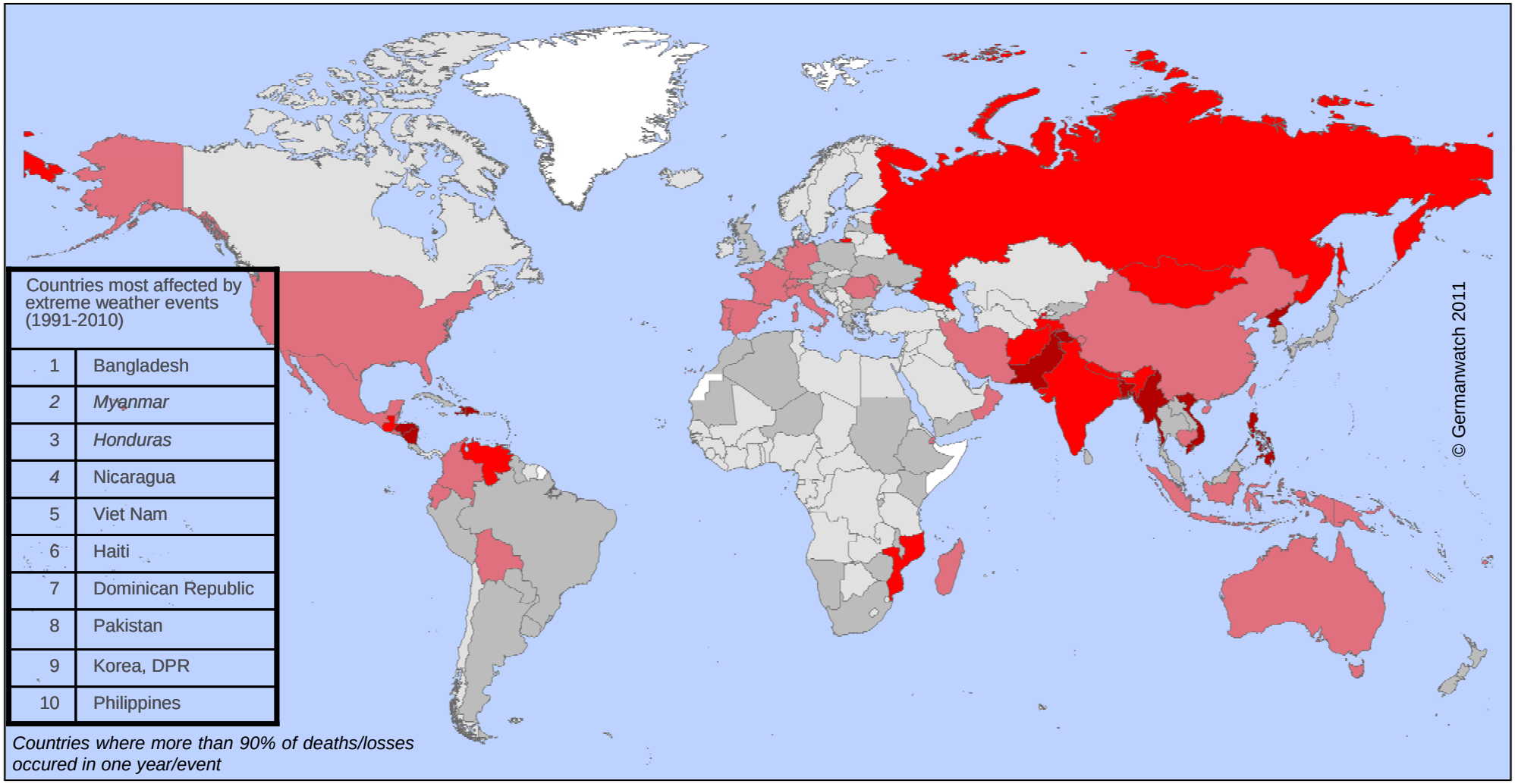


**Figure 1: World Map of the Global Climate Risk Index 1991-2010**

Source: Germanwatch and Munich Re NatCatSERVICE

# 2 Impacts on Africa

Durban as the host of this year´s COP is situated in a world region which is seen as particularly vulnerable to the adverse impacts of climate change. The countries of Africa use to feature relatively low on the Climate Risk Index. In the African regions, indirect impacts like food scarcity as consecuence of droughts often cause the most severe consequences which cannot be considered with sufficient reliability in the data that provide the basis for the Climate Risk Index.

Table 3 lists the 10 countries of the continent which rank highest in the Climate Risk Index for the period from 1991-2010, Table 4 only refers to 2010. The figures for other countries of the region can be found in the Annexes.

However, this does not mean that Africa is not affected. Databases also try to assess the number of people affected, using different categories such as affected, homeless or injured.[9] EM-DAT counts almost 37 million people affected in 2010 (see Table 5). However, the problem is that these figures are much less than reliable and more difficult to determine than the number of deaths. Using them in a comparison of more than 150 countries worldwide, as would be necessary in the case of the Climate Risk Index, does not seem justified from a scientific and methodological point of view.

**Table 3: African countries in the CRI 1991-2010**

| Ranking CRI | Country | CRI score | Death toll | Deaths per 100,000 inhabitants | Absolute losses (in million US$ PPP) | Losses per unit GDP in % | Number of events | Human Development Index[10] |
|---|---|---|---|---|---|---|---|---|
| 19 | **Mozambique** | 38.17 | 1,745 | 0.49 | 95.97 | 0.92 | 50 | 184 |
| 28 | **Madagascar** | 43.83 | 1,614 | 0.49 | 75.10 | 0.55 | 41 | 151 |
| 41 | **Djibouti** | 53.00 | 175 | 1.31 | 9.98 | 0.73 | 9 | 165 |
| 60 | **Malawi** | 62.50 | 596 | 0.24 | 34.93 | 0.46 | 26 | 171 |
| 74 | **Kenya** | 77.17 | 984 | 0.16 | 66.86 | 0.15 | 62 | 143 |
| 79 | **Namibia** | 81.50 | 160 | 0.44 | 10.96 | 0.12 | 28 | 120 |
| 79 | **Zimbabwe** | 81.50 | 185 | 0.08 | 22.35 | 0.42 | 28 | 173 |
| 83 | **South Africa** | 82.67 | 1,216 | 0.14 | 242.20 | 0.07 | 307 | 123 |
| 85 | **Sudan** | 83.50 | 846 | 0.13 | 81.26 | 0.11 | 37 | 169 |
| 88 | **Morocco** | 85.17 | 546 | 0.10 | 112.33 | 0.12 | 41 | 130 |

[9] See also www.emdat.be
[10] UNDP, 2011: Human Development Report, http://hdr.undp.org/en/statistics/hdi/

This picture does not change significantly if other data bases are referred to. For example, also EM-DAT managed by the Centre for Research on Epidemiological Diseases (CRED), counts less than 1,000 fatalities from storms, floods, droughts and wildfires in the whole of Africa.[11]

**Table 4: African countries in the CRI 2010**

| Ranking CRI | Country | CRI score | Death toll | Deaths per 100,000 inhabitants | Absolute losses (in million US$ PPP) | Losses per unit GDP in % | Number of events | Human Development Index[12] |
|---|---|---|---|---|---|---|---|---|
| 14 | **Benin** | 26.50 | 53 | 0.55 | 63.66 | 0.46 | 1 | 167 |
| 27 | **Madagascar** | 35.83 | 86 | 0.40 | 22.61 | 0.11 | 2 | 151 |
| 29 | **Uganda** | 37.83 | 307 | 0.90 | 6.71 | 0.02 | 8 | 161 |
| 33 | **Ghana** | 41.00 | 109 | 0.46 | 20.08 | 0.03 | 2 | 135 |
| 34 | **Angola** | 41.50 | 156 | 0.82 | 7.30 | 0.01 | 3 | 148 |
| 37 | **Mauritania** | 43.50 | 21 | 0.66 | 3.70 | 0.06 | 1 | 159 |
| 42 | **Chad** | 49.50 | 27 | 0.26 | 8.14 | 0.04 | 3 | 183 |
| 43 | **Kenya** | 49.67 | 93 | 0.23 | 14.53 | 0.02 | 3 | 143 |
| 47 | **Morocco** | 54.33 | 43 | 0.14 | 27.01 | 0.02 | 4 | 130 |
| 51 | **Togo** | 58.00 | 21 | 0.30 | 0.94 | 0.02 | 1 | 162 |

Table 5 shows the numbers of affected people for African countries for 2010 from the different types of climate-related disasters.

**Table 5: Different types of climate-related disasters in African countries and number of affected people**

| Country | Drought | Flood | Storm | Wildfire | Total |
|---|---|---|---|---|---|
| **Angola** | 0 | 189,781 | 0 | 0 | 189,781 |
| **Benin** | 0 | 831,000 | 0 | 0 | 831,000 |
| **Burkina Faso** | 0 | 133,362 | 0 | 0 | 133,362 |
| **Burundi** | 180,000 | 1,990 | 1,500 | 0 | 183,490 |
| **Cameroon** | 0 | 3,095 | 0 | 0 | 3,095 |
| **Central African Rep** | 0 | 1,585 | 0 | 0 | 1,585 |
| **Chad** | 2,400,000 | 144,579 | 0 | 0 | 2,544,579 |
| **Cote d'Ivoire** | 0 | 6,425 | 0 | 0 | 6,425 |
| **Djibouti** | 165,264 | 0 | 0 | 0 | 165,264 |
| **Egypt** | 0 | 3,500 | 40 | 0 | 3,540 |
| **Ethiopia** | 6,200,000 | 80,700 | 0 | 0 | 6,280,700 |
| **Gabon** | 0 | 0 | 1,765 | 0 | 1,765 |
| **Gambia** | 0 | 38,961 | 0 | 0 | 38,961 |
| **Ghana** | 0 | 17,174 | 0 | 0 | 17,174 |

[11] Query made in EM-DAT database on 17 November 2011, see www.emdat.be
[12] UNDP, 2011: Human Development Report, http://hdr.undp.org/en/statistics/hdi/

| Country | Drought | Flood | Storm | Wildfire | Total |
|---|---|---|---|---|---|
| **Guinea** | 0 | 48,026 | 0 | 0 | 48,026 |
| **Guinea Bis-sau** | 0 | 56,792 | 0 | 0 | 56,792 |
| **Kenya** | 3,754,585 | 211,164 | 0 | 0 | 3,965,749 |
| **Liberia** | | 15,486 | 0 | 0 | 15,486 |
| **Madagascar** | 720,000 | 0 | 192,132 | 0 | 912,132 |
| **Malawi** | 0 | 21,290 | 0 | 0 | 21,290 |
| **Mali** | 600,000 | 8,750 | 0 | 0 | 632,000 |
| **Mauritania** | 300,000 | 8,750 | 0 | 0 | 308,750 |
| **Morocco** | 0 | 77,009 | 0 | 0 | 77,009 |
| **Mozambique** | 460,000 | 17,000 | 0 | 0 | 477,000 |
| **Namibia** | | 110,000 | 0 | 0 | 110,000 |
| **Niger** | 7,900,000 | 233,226 | 0 | 0 | 8,133,226 |
| **Nigeria** | | 1,500,200 | 0 | 0 | 1,500,200 |
| **Rwanda** | 0 | 0 | 0 | 0 | 0 |
| **Senegal** | 0 | 102,516 | 0 | 0 | 102,516 |
| **Sierra Leone** | 0 | 234 | 0 | 0 | 234 |
| **Somalia** | 4,000,000 | 16,200 | 0 | 0 | 4,016,200 |
| **South Africa** | 0 | 0 | 6,000 | 0 | 6,000 |
| **Sudan** | 4,300,000 | 26,362 | 0 | 0 | 4,326,362 |
| **Togo** | 111,550 | 0 | 0 | 0 | 111,550 |
| **Uganda** | 0 | 0 | 0 | 0 | 0 |
| **Zaire/Congo Dem Rep** | 0 | 70,500 | 0 | 2,770 | 73,270 |
| **Zambia** | 0 | 1,200 | 0 | | 1,200 |
| **Zimbabwe** | 1,680,000 | 820 | 0 | | 1,680,820 |
| **Total** | 32,659,849 | 4,112,477 | 201,437 | 2,770 | 36,976,533 |

Source: own query on "EM-DAT: The OFDA/CRED International Disaster Database

Figures such as nearly 1 in 30 Africans affected by drought in 2010 only, but also considerable flooding exposures and vulnerabilities highlight the need for African countries to embark much more expeditiously on a risk reduction paradigm. Adding climate impacts, such as desertification and increased variability of extremes, means that adaptation must be of top priority for African countries. Since response capacity is the lowest in African countries, and African countries also have contributed almost nothing to the climate crisis, the support of this endevour becomes a priority, yet obligation for the international community and developed countries in particular.

One interesting approach, where African countries develop their own response, is the African Risk Capacity Project. This project by the African Union would be a pan-African risk pool that provides quick contingency funds to their member states in case of severe droughts. This in return could reduce significantly the delay of providing help when a disaster strikes. The ability to provide funds quickly might help to prevent disasters turning into humanitarian crises at a later point. Right now the African Risk Capacity project is in its feasibility, design and scoping stage, but if it turns out viable, it would be a great showcase for African leadership in the fight against climate and weather impacts.

At a later stage it might also cover other weather-linked catastrophes such as flooding. For further information on the African Risk Capacity project, visit www.africanriskcapacity.org. For further information on climate-related insurance solutions including proposals in the UNFCCC context visit www.climate-insurance.org hosted by the Munich Climate Insurance Initiative (MCII).

# 3 Operationalising the Loss and Damage Work Programme in Durban

At the UN Climate Summit in Cancún in 2010, Parties to the UNFCCC agreed to establish a work programme on loss and damage from climate change impacts.[13]

What is important to take into account is that adressing loss and damage is crucial because it recognizes that

A) the next 20 years or so of climate change impacts are locked in because of the emissions already accumulated in the atmosphere and their associated effects on global warming. So we have to look at the implementation of concrete actions to address and reduce loss and damage from extreme weather-related risks today;

B) mitigation of emissions remains a critical longer-term goal to try and buffer or reduce the potentially significant systemic shifts that may be associated with climate change issues like sea-level rise, desertification, glacial melt, etc. If the world continues on the current emission path, we will likely have to face a global average temperature increase of well-above 3 to 4°C, with potentially desastrous consequences.

Therefore it is high time for Parties to address the consequences of loss & damage, in parallel with stepping up their mitigation ambition.

While the negotiations in Durban will likely have the negotiations over the Kyoto Protocol, a legally binding agreement under the Convention and climate finance as its focus, progressing on the loss and damage work programme will be a crucial element for an adaptation package, along with other issues such as the establishment of the Adaptation Committee, the adoption of guidelines and modalities for National Adaptation Plans and the agreement on a next phase of the Nairobi Work Programme on Impacts, Adaptation and Vulnerability.

The work programme itself is dealt with under the Subsidiary Body for Implementation (SBI). It has acknowledged the necessity to understand exposure, explore a range of options, and look at ways to implement activities that will tangibly help avoid and reduce loss and damage. In order to further elaborate the work programme which has only been an empty shell so far, Parties made submissions on their views, and in October an expert workshop was organised in Panama. The work programme is currently organised in the following three areas:

a. Assessing the risk of loss and damage associated with the adverse effects of climate change and the current knowledge on the same;
b. A range of approaches to address loss and damage associated with the adverse effects of climate change, including impacts related to extreme weather events and slow onset events, taking into consideration experience at all levels;
c. The role of the Convention in enhancing the implementation of approaches to address loss and damage associated with the adverse effects of climate change.

A synthesis report prepared by the UNFCCC Secretariat highlighted the following potential activities in the context of the role of the Convention, based on a sequential approach to the three areas[14]:

- Identifying existing gaps and challenges, including the issue of availability of data, in order to assess different kinds of risk, loss and damage at different levels;
- Assessing current practices and lessons learned in assessing different kinds of risk, loss and damage at different levels;
- Identifying the approaches needed to address different kinds of risk, loss and damage at different levels;
- Assessing current practices and lessons learned in addressing different kinds of risk, loss and damage at different levels.

Agreeing on a more detailed work plan for the next year would be a crucial outcome in Durban, combined with a clear mandate for COP18 to take a decision on concrete next steps, ideally the elaboration of a more comprehensive mechanism to address loss and damage under the UNFCCC in the future.

[13] Decision 1/CP.16, paragraph 26
[14] See FCCC /SBI/2011/INF.13

# 4 Methodological Remarks

The presented analyses are based on the data collection and analysis, acknowledged worldwide, provided by Munich Re NatCatSERVICE. They comprise "all elementary loss events which have caused substantial damage to property or persons". For the countries of the world, Munich Re collects the number of total losses caused by weather events, the number of deaths, the insured damages and total economic damages. The last two indicators are stated in million US$ (original values, inflation adjusted).

In the present analysis, only weather related events - storms, floods, as well as temperature extremes and mass movements (heat and cold waves etc.) - are incorporated. Geological factors like earthquakes, volcanic eruptions or tsunamis, for which data is also available, do not play a role in this context because they do not depend on the weather and therefore are definitely not related to climate change. To enhance the manageability of the large amount of data, the different categories within the weather related events were combined. For single case studies on particularly devastating events it is stated whether they concern floods, storms, or another type of event.

It is important to note that this event-related examination does not allow for an assessment of continuous changes of important climate parameters. A long-term decline in precipitation that was shown for some African countries as a consequence of climate change cannot be displayed by the CRI. Such parameters nevertheless often substantially influence important development factors like agricultural outputs and the availability of drinking water.

Although certainly an interesting area for analysis, the present data does also not allow for conclusions about the distribution of damages below the national level, although this would be interesting. However, the data quality would only be sufficient for a limited number of countries.

**Analysed indicators**

For this examination the following indicators were analysed in this paper:

1. Number of deaths,
2. Number of deaths per 100 000 inhabitants,
3. Sum of losses in US$ in purchasing power parity (PPP) as well as
4. Losses per unit of Gross Domestic Product (GDP).

For the indicators 2. to 4., economic and population data primarily by the International Monetary Fund were taken into account. However, it has to be added that especially for small (e.g. Pacific small island states) or politically extremely instable countries (e.g. Somalia), the required data is not always available in sufficient quality for the whole observed time period. Those countries have to be left out of the analyses.

The Climate Risk Index 2011 is based on the loss-figures from 2010 and 1991-2010. This ranking represents the most affected countries. Each country´s index score has been

derived from a country's average ranking in all four analyses, according to the following weighting: death toll 1/6, deaths per inhabitants 1/3, absolute losses 1/6, losses per GDP 1/3.

Therefore, an analysis of the already observable changes in climate conditions in different regions sends a warning signal to those most affected countries to better prepare for the future. Although looking at socio-economic variables in comparison to damages and deaths caused by weather extremes – as was done in the present analysis - does not allow for an exact measurement of the vulnerability, it can be seen as at least an indication or pattern of vulnerability. In most cases, already afflicted countries will probably also be especially endangered by possible future changes in climate conditions. Despite the historic analysis, a deterministic projecting of the past to the future is not appropriate. On the one hand, the likelihood for past trends in extreme weather events to continue unchanged is very low especially in a world of global climate change.

On the other hand, new phenomena can occur in states or regions. In the year 2004, for example, a hurricane was registered in the South Atlantic, off Brazil's coast, for the first time ever. The cyclone that hit Oman in 2007 or the one which hit Saudi Arabia in 2009 are of similar significance. So the appearance in the Climate Risk Index is an alarm bell for these countries. But the analyses of the Climate Risk Index should not be seen as the only evidence for which countries are already afflicted or will be affected by global climate change. After all, people can in principle fall back on different adaptation measures. However, to which extent these can be implemented effectively depends on several factors which altogether determine the degree of vulnerability.

**The relative consequences also depend on economic and population growth**

Identifying relative values in this index represents an important complement to the otherwise often dominating absolute values because it allows for analysing country specific data on damages in relation to real conditions in those countries. It is obvious, for example, that one billion US$ for a rich country like the USA entail much less economic consequences than for one of the world’s poorest countries. This is being backed up by the relative analysis.

It should be noted that values and therefore the rankings of countries regarding the respective indicators do not only change due to the absolute impacts of extreme weather events, but also due to economic and population growth. If, for example, population increases, which is the case in most of the countries, the same absolute number of deaths leads to a relatively lower assessment in the following year. The same applies to economic growth. However, this does not affect the significance of the relative approach. The ability of society to cope with damages, through precaution, mitigation and disaster preparedness, insurances or the improved availability of means for emergency aid, generally rises along with increasing economic strength. Nevertheless, an improved ability does not necessarily imply enhanced implementation of effective preparation and response measures. While absolute numbers tend to overestimate populous or economically capable countries, relative values place stronger weight on smaller and poorer countries. To give consideration to both effects, the analysis of the Climate Risk

Index is based on absolute and on relative scores, with a weighting that gives the relative losses a higher importance than the absolute losses.

**The indicator "losses in purchasing power parity" allows for a more comprehensive estimation of how different societies are actually affected**

The indicator “absolute losses in US$” is being identified through purchasing power parity (PPP), because using this figure better expresses how people are actually affected by the loss of one US$ than using nominal exchange rates. Purchasing power parity are currency exchange rates which permit a comparison of e.g. national GDP, by incorporating price differences between countries. Simplified, this means that a farmer in India can buy more crop with US$ 1 than a farmer in the USA with US$ 1. Therefore, the real consequences of the same nominal damage are much higher in India. For most of the countries, US$ values according to exchange rates must therefore be multiplied by a factor bigger than one.

# Annexes

CRI = Climate Risk Index; GDP = gross domestic product; PPP = purchasing power parity

**Table 4: Climate Risk Index for 1991-2010**

(Avg. = average figure for the 20-year period)

| Rank CRI | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ PPP | | Losses per GDP in % | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Avg. | Rank | Avg. | Rank | Avg. | Rank | Avg. | Rank |
| 140 | **Albania** | 120.83 | 1.95 | 130 | 0.06 | 117 | 12.50 | 127 | 0.07 | 117 |
| 94 | **Algeria** | 90.50 | 71.05 | 39 | 0.23 | 68 | 47.88 | 88 | 0.03 | 140 |
| 120 | **Angola** | 109.33 | 21.45 | 68 | 0.15 | 83 | 11.67 | 128 | 0.01 | 147 |
| 31 | **Antigua and Barbuda** | 47.17 | 1.00 | 141 | 1.39 | 15 | 39.41 | 94 | 3.43 | 9 |
| 99 | **Argentina** | 92.50 | 26.85 | 67 | 0.07 | 112 | 357.05 | 36 | 0.09 | 114 |
| 145 | **Armenia** | 123.50 | 0.40 | 154 | 0.01 | 159 | 19.39 | 117 | 0.17 | 76 |
| 44 | **Australia** | 54.50 | 45.70 | 50 | 0.23 | 68 | 1523.43 | 15 | 0.25 | 63 |
| 53 | **Austria** | 59.83 | 30.40 | 64 | 0.38 | 50 | 385.91 | 33 | 0.16 | 81 |
| 135 | **Azerbaijan** | 117.83 | 2.10 | 128 | 0.03 | 143 | 56.89 | 85 | 0.10 | 104 |
| 139 | **Bahrain** | 119.83 | 2.90 | 120 | 0.42 | 46 | 0.79 | 167 | 0.00 | 170 |
| 1 | **Bangladesh** | 8.17 | 7,814.35 | 1 | 5.51 | 3 | 2091.32 | 8 | 1.56 | 17 |
| 160 | **Barbados** | 144.17 | 0.05 | 167 | 0.02 | 154 | 3.09 | 156 | 0.07 | 117 |
| 150 | **Belarus** | 127.67 | 4.20 | 110 | 0.04 | 133 | 26.53 | 110 | 0.03 | 140 |
| 73 | **Belgium** | 77.00 | 85.70 | 33 | 0.83 | 24 | 49.47 | 87 | 0.02 | 147 |
| 29 | **Belize** | 44.67 | 2.40 | 124 | 0.93 | 23 | 57.52 | 84 | 3.63 | 7 |
| 147 | **Benin** | 126.33 | 3.80 | 113 | 0.05 | 124 | 4.83 | 151 | 0.06 | 123 |
| 82 | **Bhutan** | 82.17 | 2.30 | 125 | 0.39 | 49 | 4.85 | 150 | 0.26 | 60 |
| 34 | **Bolivia** | 48.83 | 36.00 | 57 | 0.42 | 46 | 127.81 | 62 | 0.43 | 41 |
| 124 | **Bosnia and Herzegovina** | 111.67 | 0.35 | 156 | 0.01 | 159 | 65.64 | 80 | 0.27 | 58 |
| 118 | **Botswana** | 108.00 | 1.50 | 136 | 0.09 | 100 | 17.90 | 118 | 0.11 | 97 |
| 96 | **Brazil** | 91.17 | 121.05 | 24 | 0.07 | 112 | 566.64 | 31 | 0.04 | 134 |
| 174 | **Brunei Darussalam** | 160.33 | 0.10 | 166 | 0.03 | 143 | 0.32 | 170 | 0.00 | 170 |
| 93 | **Bulgaria** | 90.33 | 5.05 | 102 | 0.06 | 117 | 183.14 | 54 | 0.17 | 76 |
| 103 | **Burkina Faso** | 95.33 | 5.55 | 101 | 0.05 | 124 | 31.58 | 103 | 0.26 | 60 |
| 91 | **Burundi** | 89.00 | 6.75 | 93 | 0.10 | 97 | 7.62 | 141 | 0.31 | 53 |
| 37 | **Cambodia** | 50.33 | 38.30 | 56 | 0.31 | 60 | 113.13 | 64 | 0.77 | 31 |
| 152 | **Cameroon** | 134.67 | 6.20 | 96 | 0.04 | 133 | 4.35 | 152 | 0.01 | 147 |
| 110 | **Canada** | 100.67 | 11.80 | 80 | 0.04 | 133 | 672.85 | 24 | 0.07 | 117 |
| 129 | **Cape Verde** | 115.83 | 0.15 | 162 | 0.03 | 143 | 3.80 | 153 | 0.37 | 47 |
| 166 | **Central African Republic** | 152.50 | 0.90 | 142 | 0.02 | 154 | 0.30 | 171 | 0.01 | 147 |
| 112 | **Chad** | 101.00 | 4.85 | 104 | 0.06 | 117 | 20.02 | 116 | 0.17 | 76 |
| 101 | **Chile** | 93.83 | 15.55 | 72 | 0.10 | 97 | 121.85 | 63 | 0.07 | 117 |
| 21 | **China** | 39.83 | 2,079.70 | 5 | 0.16 | 81 | 28600.88 | 2 | 0.64 | 35 |
| 47 | **Colombia** | 55.17 | 99.65 | 27 | 0.25 | 66 | 594.00 | 28 | 0.21 | 72 |
| 179 | **Comoros** | 171.17 | 0.00 | 172 | 0.00 | 168 | 0.00 | 179 | 0.00 | 170 |
| 69 | **Costa Rica** | 71.17 | 9.80 | 82 | 0.23 | 68 | 72.61 | 77 | 0.24 | 66 |
| 158 | **Cote d'Ivoire** | 140.50 | 4.40 | 108 | 0.03 | 143 | 3.16 | 155 | 0.01 | 147 |
| 64 | **Croatia** | 67.00 | 34.75 | 59 | 0.78 | 26 | 62.03 | 83 | 0.10 | 104 |
| 61 | **Cuba** | 65.17 | 6.95 | 92 | 0.06 | 117 | 2301.23 | 5 | 0.80 | 30 |
| 104 | **Cyprus** | 95.67 | 3.60 | 114 | 0.51 | 38 | 9.15 | 138 | 0.06 | 123 |
| 70 | **Czech Republic** | 73.50 | 8.00 | 87 | 0.08 | 104 | 577.53 | 30 | 0.27 | 58 |
| 154 | **Democratic Republic of Congo** | 136.50 | 14.35 | 74 | 0.03 | 143 | 1.01 | 165 | 0.01 | 147 |

| Rank CRI | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ PPP | | Losses per GDP in % | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Avg. | Rank | Avg. | Rank | Avg. | Rank | Avg. | Rank |
| 176 | **Democratic Republic of Timor-Leste** | 166.67 | 0.10 | 166 | 0.01 | 159 | 0.07 | 176 | 0.00 | 170 |
| 133 | **Denmark** | 117.00 | 0.80 | 147 | 0.01 | 159 | 191.85 | 51 | 0.12 | 93 |
| 41 | **Djibouti** | 53.00 | 8.75 | 85 | 1.31 | 18 | 9.98 | 133 | 0.73 | 32 |
| 57 | **Dominica** | 61.00 | 0.25 | 159 | 0.35 | 54 | 38.37 | 95 | 5.98 | 2 |
| 7 | **Dominican Republic** | 30.50 | 211.55 | 20 | 2.51 | 7 | 181.49 | 55 | 0.37 | 47 |
| 24 | **Ecuador** | 42.00 | 63.25 | 41 | 0.49 | 39 | 282.96 | 39 | 0.37 | 47 |
| 125 | **Egypt** | 112.50 | 42.30 | 52 | 0.07 | 112 | 30.00 | 105 | 0.01 | 147 |
| 23 | **El Salvador** | 40.33 | 32.00 | 62 | 0.58 | 32 | 205.74 | 50 | 0.66 | 33 |
| 179 | **Equatorial Guinea** | 171.17 | 0.00 | 172 | 0.00 | 168 | 0.00 | 179 | 0.00 | 170 |
| 123 | **Eritrea** | 110.33 | 0.15 | 162 | 0.00 | 168 | 28.08 | 106 | 0.84 | 29 |
| 148 | **Estonia** | 127.17 | 0.40 | 154 | 0.03 | 143 | 20.41 | 115 | 0.10 | 104 |
| 100 | **Ethiopia** | 93.00 | 91.25 | 29 | 0.14 | 87 | 26.76 | 109 | 0.06 | 123 |
| 37 | **Fiji** | 50.33 | 6.00 | 98 | 0.74 | 28 | 32.86 | 102 | 1.11 | 23 |
| 167 | **Finland** | 153.50 | 0.15 | 162 | 0.00 | 168 | 11.38 | 129 | 0.01 | 147 |
| 102 | **Former Yugoslav Republic of Macedonia** | 94.50 | 0.85 | 145 | 0.04 | 133 | 74.49 | 76 | 0.45 | 40 |
| 26 | **France** | 42.67 | 965.45 | 8 | 1.62 | 13 | 1616.78 | 14 | 0.10 | 104 |
| 178 | **Gabon** | 171.00 | 0.00 | 172 | 0.00 | 168 | 0.04 | 178 | 0.00 | 170 |
| 114 | **Georgia** | 102.67 | 3.55 | 115 | 0.04 | 133 | 34.49 | 99 | 0.23 | 68 |
| 32 | **Germany** | 48.50 | 475.15 | 12 | 0.58 | 32 | 2185.51 | 7 | 0.10 | 104 |
| 127 | **Ghana** | 113.83 | 16.40 | 71 | 0.09 | 100 | 10.25 | 132 | 0.03 | 140 |
| 86 | **Greece** | 83.67 | 13.45 | 76 | 0.12 | 94 | 259.15 | 44 | 0.11 | 97 |
| 15 | **Grenada** | 37.00 | 2.00 | 129 | 1.98 | 10 | 86.85 | 71 | 8.84 | 1 |
| 12 | **Guatemala** | 33.33 | 85.35 | 34 | 0.76 | 27 | 273.95 | 40 | 0.57 | 36 |
| 163 | **Guinea** | 150.00 | 1.85 | 132 | 0.02 | 154 | 0.87 | 166 | 0.01 | 147 |
| 131 | **Guinea-Bissau** | 116.67 | 0.10 | 166 | 0.01 | 159 | 7.53 | 142 | 0.55 | 37 |
| 97 | **Guyana** | 92.33 | 0.30 | 157 | 0.04 | 133 | 41.70 | 91 | 1.16 | 20 |
| 5 | **Haiti** | 21.17 | 340.65 | 16 | 3.95 | 5 | 154.57 | 57 | 1.12 | 22 |
| 3 | **Honduras** | 11.67 | 327.75 | 17 | 5.05 | 4 | 662.27 | 25 | 2.93 | 10 |
| 179 | **Hong Kong SAR** | 171.17 | 0.00 | 172 | 0.00 | 168 | 0.00 | 179 | 0.00 | 170 |
| 63 | **Hungary** | 66.50 | 33.95 | 60 | 0.33 | 56 | 206.35 | 49 | 0.14 | 89 |
| 119 | **Iceland** | 108.50 | 1.80 | 133 | 0.63 | 30 | 1.06 | 164 | 0.01 | 147 |
| 20 | **India** | 38.33 | 3,198.80 | 3 | 0.31 | 60 | 6233.37 | 3 | 0.32 | 52 |
| 47 | **Indonesia** | 55.17 | 288.40 | 18 | 0.14 | 87 | 1619.11 | 13 | 0.25 | 63 |
| 165 | **Iraq** | 151.33 | 0.90 | 142 | 0.00 | 168 | 9.66 | 136 | 0.01 | 147 |
| 143 | **Ireland** | 122.17 | 1.90 | 131 | 0.05 | 124 | 53.95 | 86 | 0.04 | 134 |
| 14 | **Islamic Republic of Afghanistan** | 36.83 | 351.60 | 15 | 1.32 | 17 | 70.37 | 78 | 0.37 | 47 |
| 40 | **Islamic Republic of Iran** | 50.67 | 86.75 | 32 | 0.13 | 91 | 2327.91 | 4 | 0.41 | 43 |
| 113 | **Israel** | 101.50 | 5.00 | 103 | 0.08 | 104 | 107.41 | 66 | 0.08 | 116 |
| 25 | **Italy** | 42.17 | 1,005.55 | 7 | 1.74 | 11 | 1522.85 | 16 | 0.10 | 104 |
| 56 | **Jamaica** | 60.83 | 4.65 | 105 | 0.18 | 75 | 176.49 | 56 | 0.89 | 27 |
| 95 | **Japan** | 90.67 | 67.10 | 40 | 0.05 | 124 | 1939.29 | 10 | 0.06 | 123 |
| 151 | **Jordan** | 129.83 | 2.55 | 123 | 0.05 | 124 | 7.65 | 140 | 0.04 | 134 |
| 128 | **Kazakhstan** | 114.67 | 12.45 | 78 | 0.08 | 104 | 27.08 | 108 | 0.02 | 147 |
| 74 | **Kenya** | 77.17 | 49.20 | 48 | 0.16 | 81 | 66.86 | 79 | 0.15 | 87 |
| 117 | **Kiribati** | 106.83 | 0.00 | 172 | 0.00 | 168 | 16.87 | 121 | 3.86 | 6 |
| 9 | **Korea, DPR** | 30.83 | 74.85 | 38 | 0.33 | 56 | 1171.75 | 19 | 3.61 | 8 |

| Rank CRI | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ PPP | | Losses per GDP in % | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Avg. | Rank | Avg. | Rank | Avg. | Rank | Avg. | Rank |
| 57 | **Korea, Republic** | 61.00 | 89.95 | 30 | 0.19 | 72 | 1233.75 | 18 | 0.15 | 87 |
| 169 | **Kuwait** | 154.50 | 0.85 | 145 | 0.04 | 133 | 0.07 | 176 | 0.00 | 170 |
| 70 | **Kyrgyz Republic** | 73.50 | 19.05 | 70 | 0.38 | 50 | 16.33 | 123 | 0.19 | 74 |
| 76 | **Lao People's Democratic Republic** | 79,17 | 3.45 | 117 | 0.06 | 117 | 77.27 | 74 | 0.95 | 25 |
| 79 | **Latvia** | 81.50 | 4.00 | 111 | 0.17 | 78 | 62.24 | 82 | 0.22 | 70 |
| 141 | **Lebanon** | 121.00 | 2.30 | 125 | 0.07 | 112 | 17.77 | 119 | 0.05 | 129 |
| 115 | **Lesotho** | 105.17 | 0.25 | 159 | 0.01 | 159 | 24.79 | 112 | 1.14 | 21 |
| 171 | **Liberia** | 157.00 | 0.30 | 157 | 0.01 | 159 | 0.19 | 173 | 0.01 | 147 |
| 172 | **Libya** | 158.00 | 0.00 | 172 | 0.00 | 168 | 6.57 | 146 | 0.01 | 147 |
| 133 | **Lithuania** | 117.00 | 2.60 | 122 | 0.08 | 104 | 21.83 | 114 | 0.05 | 129 |
| 105 | **Luxembourg** | 95.83 | 6.50 | 95 | 1.47 | 14 | 2.83 | 158 | 0.01 | 147 |
| 28 | **Madagascar** | 43.83 | 80.70 | 36 | 0.49 | 39 | 75.10 | 75 | 0.55 | 37 |
| 60 | **Malawi** | 62.50 | 29.80 | 65 | 0.24 | 67 | 34.93 | 98 | 0.46 | 39 |
| 87 | **Malaysia** | 85.00 | 41.95 | 54 | 0.18 | 75 | 148.20 | 60 | 0.06 | 123 |
| 156 | **Maldives** | 138.33 | 0.00 | 172 | 0.00 | 168 | 2.20 | 160 | 0.16 | 81 |
| 137 | **Mali** | 118.83 | 3.05 | 119 | 0.03 | 143 | 12.94 | 126 | 0.13 | 91 |
| 170 | **Malta** | 155.50 | 0.00 | 172 | 0.00 | 168 | 2.92 | 157 | 0.04 | 134 |
| 92 | **Mauritania** | 90.17 | 3.95 | 112 | 0.15 | 83 | 10.64 | 131 | 0.24 | 66 |
| 109 | **Mauritius** | 99.67 | 0.55 | 151 | 0.05 | 124 | 35.74 | 97 | 0.33 | 51 |
| 49 | **Mexico** | 58.17 | 138.20 | 23 | 0.14 | 87 | 2243.51 | 6 | 0.20 | 73 |
| 45 | **Moldova** | 54.67 | 6.60 | 94 | 0.17 | 78 | 185.29 | 52 | 2.15 | 13 |
| 11 | **Mongolia** | 32.83 | 12.90 | 77 | 0.53 | 36 | 309.59 | 38 | 4.59 | 5 |
| 88 | **Morocco** | 85.17 | 27.30 | 66 | 0.10 | 97 | 112.33 | 65 | 0.12 | 93 |
| 19 | **Mozambique** | 38.17 | 87.25 | 31 | 0.49 | 39 | 95.97 | 68 | 0.92 | 26 |
| 2 | **Myanmar** | 10.50 | 7,130.20 | 2 | 14.06 | 1 | 658.69 | 27 | 1.68 | 16 |
| 79 | **Namibia** | 81.50 | 8.00 | 87 | 0.44 | 43 | 10.96 | 130 | 0.12 | 93 |
| 17 | **Nepal** | 37.17 | 273.35 | 19 | 1.12 | 20 | 81.61 | 72 | 0.38 | 46 |
| 72 | **Netherlands** | 74.33 | 84.60 | 35 | 0.53 | 36 | 152.88 | 59 | 0.03 | 140 |
| 78 | **New Zealand** | 80.17 | 3.55 | 115 | 0.09 | 100 | 224.07 | 46 | 0.26 | 60 |
| 4 | **Nicaragua** | 18.00 | 159.65 | 21 | 2.83 | 6 | 212.13 | 47 | 1.90 | 14 |
| 89 | **Niger** | 86.33 | 7.05 | 91 | 0.06 | 117 | 27.82 | 107 | 0.41 | 43 |
| 136 | **Nigeria** | 118.50 | 45.20 | 51 | 0.04 | 133 | 34.38 | 100 | 0.01 | 147 |
| 152 | **Norway** | 134.67 | 1.20 | 139 | 0.03 | 143 | 45.51 | 89 | 0.02 | 147 |
| 37 | **Oman** | 50.33 | 6.20 | 96 | 0.26 | 63 | 463.82 | 32 | 0.98 | 24 |
| 8 | **Pakistan** | 30.67 | 558.75 | 11 | 0.40 | 48 | 1833.92 | 11 | 0.66 | 33 |
| 110 | **Panama** | 100.67 | 9.60 | 83 | 0.32 | 59 | 9.74 | 135 | 0.04 | 134 |
| 45 | **Papua New Guinea** | 54.67 | 33.95 | 60 | 0.65 | 29 | 30.86 | 104 | 0.31 | 53 |
| 97 | **Paraguay** | 92.33 | 5.95 | 99 | 0.11 | 96 | 33.98 | 101 | 0.16 | 81 |
| 62 | **Peru** | 66.33 | 93.75 | 28 | 0.37 | 52 | 154.10 | 58 | 0.10 | 104 |
| 10 | **Philippines** | 31.83 | 801.40 | 9 | 1.03 | 22 | 659.79 | 26 | 0.30 | 56 |
| 65 | **Poland** | 67.83 | 46.30 | 49 | 0.12 | 94 | 911.10 | 22 | 0.19 | 74 |
| 22 | **Portugal** | 40.17 | 142.65 | 22 | 1.39 | 15 | 334.88 | 37 | 0.17 | 76 |
| 179 | **Qatar** | 171.17 | 0.00 | 172 | 0.00 | 168 | 0.00 | 179 | 0.00 | 170 |
| 142 | **Republic of Congo** | 121.17 | 7.95 | 89 | 0.26 | 63 | 0.29 | 172 | 0.00 | 170 |
| 59 | **Republic of Yemen** | 62.33 | 52.60 | 47 | 0.29 | 62 | 102.20 | 67 | 0.23 | 68 |
| 30 | **Romania** | 46.33 | 58.55 | 45 | 0.26 | 63 | 941.17 | 21 | 0.41 | 43 |
| 18 | **Russia** | 37.50 | 2,931.10 | 4 | 2.01 | 9 | 1963.94 | 9 | 0.11 | 97 |
| 115 | **Rwanda** | 105.17 | 7.10 | 90 | 0.09 | 100 | 6.41 | 147 | 0.11 | 97 |
| 51 | **Samoa** | 58.67 | 0.65 | 148 | 0.37 | 52 | 40.35 | 92 | 5.41 | 4 |
| 179 | **Sao Tome and Principe** | 171.17 | 0.00 | 172 | 0.00 | 168 | 0.00 | 179 | 0.00 | 170 |
| 122 | **Saudi Arabia** | 110.00 | 14.40 | 73 | 0.07 | 112 | 94.49 | 69 | 0.02 | 147 |

| Rank CRI | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ PPP | | Losses per GDP in % | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Avg. | Rank | Avg. | Rank | Avg. | Rank | Avg. | Rank |
| 154 | **Senegal** | 136.50 | 3.45 | 117 | 0.03 | 143 | 6.11 | 148 | 0.04 | 134 |
| 131 | **Serbia, Montenegro, Kosovo** | 116.67 | 0.45 | 153 | 0.01 | 159 | 264.89 | 43 | 0.12 | 93 |
| 173 | **Seychelles** | 159.50 | 0.00 | 172 | 0.00 | 168 | 0.35 | 169 | 0.03 | 140 |
| 130 | **Sierra Leone** | 116.33 | 8.05 | 86 | 0.18 | 75 | 0.60 | 168 | 0.02 | 147 |
| 177 | **Singapore** | 166.83 | 0.10 | 166 | 0.00 | 168 | 2.43 | 159 | 0.00 | 170 |
| 108 | **Slovak Republic** | 98.83 | 4.50 | 107 | 0.08 | 104 | 90.19 | 70 | 0.10 | 104 |
| 68 | **Slovenia** | 70.83 | 12.05 | 79 | 0.60 | 31 | 43.00 | 90 | 0.11 | 97 |
| 52 | **Solomon Islands** | 59.50 | 10.75 | 81 | 2.50 | 8 | 3.43 | 154 | 0.31 | 53 |
| 83 | **South Africa** | 82.67 | 60.80 | 43 | 0.14 | 87 | 242.20 | 45 | 0.07 | 117 |
| 27 | **Spain** | 43.67 | 706.35 | 10 | 1.70 | 12 | 990.96 | 20 | 0.10 | 104 |
| 77 | **Sri Lanka** | 79.50 | 34.95 | 58 | 0.19 | 72 | 63.49 | 81 | 0.11 | 97 |
| 50 | **St. Kitts and Nevis** | 58.50 | 0.20 | 161 | 0.43 | 44 | 35.87 | 96 | 5.66 | 3 |
| 41 | **St. Lucia** | 53.00 | 1.70 | 135 | 1.10 | 21 | 25.43 | 111 | 1.88 | 15 |
| 67 | **St. Vincent and the Grenadines** | 69.67 | 0.60 | 149 | 0.56 | 35 | 7.19 | 143 | 0.87 | 28 |
| 85 | **Sudan** | 83.50 | 42.30 | 52 | 0.13 | 91 | 81.26 | 73 | 0.11 | 97 |
| 174 | **Suriname** | 160.33 | 0.15 | 162 | 0.03 | 143 | 0.16 | 174 | 0.00 | 170 |
| 121 | **Swaziland** | 109.50 | 0.90 | 142 | 0.08 | 104 | 6.63 | 145 | 0.16 | 81 |
| 149 | **Sweden** | 127.33 | 1.35 | 137 | 0.02 | 154 | 131.58 | 61 | 0.05 | 129 |
| 32 | **Switzerland** | 48.50 | 59.35 | 44 | 0.82 | 25 | 381.53 | 35 | 0.16 | 81 |
| 161 | **Syrian Arab Republic** | 145.00 | 1.75 | 134 | 0.01 | 159 | 15.64 | 124 | 0.02 | 147 |
| 43 | **Taiwan Province of China** | 53.33 | 77.40 | 37 | 0.35 | 54 | 812.36 | 23 | 0.17 | 76 |
| 13 | **Tajikistan** | 35.00 | 31.15 | 63 | 0.48 | 42 | 273.72 | 41 | 2.88 | 11 |
| 126 | **Tanzania** | 113.50 | 20.10 | 69 | 0.06 | 117 | 16.95 | 120 | 0.05 | 129 |
| 55 | **Thailand** | 60.17 | 116.65 | 26 | 0.19 | 72 | 589.19 | 29 | 0.16 | 81 |
| 36 | **The Bahamas** | 49.67 | 1.30 | 138 | 0.43 | 44 | 210.47 | 48 | 2.78 | 12 |
| 83 | **The Gambia** | 82.67 | 4.30 | 109 | 0.33 | 56 | 5.03 | 149 | 0.25 | 63 |
| 157 | **Togo** | 139.33 | 2.20 | 127 | 0.04 | 133 | 1.15 | 163 | 0.03 | 140 |
| 54 | **Tonga** | 60.00 | 1.15 | 140 | 1.15 | 19 | 6.67 | 144 | 1.18 | 19 |
| 159 | **Trinidad and Tobago** | 142.00 | 0.60 | 149 | 0.05 | 124 | 2.18 | 161 | 0.01 | 147 |
| 168 | **Tunisia** | 153.67 | 2.80 | 121 | 0.03 | 143 | 0.09 | 175 | 0.00 | 170 |
| 106 | **Turkey** | 97.83 | 53.45 | 46 | 0.08 | 104 | 184.43 | 53 | 0.03 | 140 |
| 164 | **Turkmenistan** | 150.83 | 0.00 | 172 | 0.00 | 168 | 7.98 | 139 | 0.05 | 129 |
| 107 | **Uganda** | 98.67 | 38.50 | 55 | 0.15 | 83 | 13.17 | 125 | 0.06 | 123 |
| 75 | **Ukraine** | 79.00 | 61.45 | 42 | 0.13 | 91 | 267.19 | 42 | 0.10 | 104 |
| 162 | **United Arab Emirates** | 146.00 | 0.50 | 152 | 0.02 | 154 | 16.49 | 122 | 0.01 | 147 |
| 66 | **United Kingdom** | 68.67 | 119.00 | 25 | 0.20 | 71 | 1435.87 | 17 | 0.09 | 114 |
| 34 | **United States** | 48.83 | 424.50 | 14 | 0.15 | 83 | 31053.91 | 1 | 0.30 | 56 |
| 90 | **Uruguay** | 88.50 | 5.70 | 100 | 0.17 | 78 | 40.32 | 93 | 0.13 | 91 |
| 146 | **Uzbekistan** | 125.67 | 13.50 | 75 | 0.05 | 124 | 9.46 | 137 | 0.02 | 147 |
| 138 | **Vanuatu** | 119.33 | 0.10 | 166 | 0.05 | 124 | 1.67 | 162 | 0.22 | 70 |
| 15 | **Venezuela** | 37.00 | 1,518.20 | 6 | 6.22 | 2 | 382.18 | 34 | 0.14 | 89 |
| 6 | **Vietnam** | 21.50 | 445.35 | 13 | 0.57 | 34 | 1808.63 | 12 | 1.19 | 18 |
| 144 | **Zambia** | 123.17 | 4.65 | 105 | 0.04 | 133 | 9.83 | 134 | 0.07 | 117 |
| 79 | **Zimbabwe** | 81.50 | 9.25 | 84 | 0.08 | 104 | 22.35 | 113 | 0.42 | 42 |

**Table 5: Climate Risk Index 2010**

| Rank CRI 2010 | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ (PPP) | | Losses in million USD per unit GDP (in %) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | Rank | Total | Rank | Total | Rank | Total | Rank |
| 105 | **Albania** | 85.00 | 0 | 113 | 0.00 | 112 | 10.05 | 71 | 0.04 | 51 |
| 117 | **Algeria** | 92.33 | 7 | 76 | 0.02 | 95 | 0.16 | 118 | 0.00 | 85 |
| 34 | **Angola** | 41.50 | 156 | 17 | 0.82 | 10 | 7.30 | 76 | 0.01 | 68 |
| 87 | **Antigua and Barbuda** | 76.33 | 0 | 113 | 0.00 | 112 | 6.86 | 77 | 0.40 | 22 |
| 78 | **Argentina** | 69.50 | 32 | 43 | 0.08 | 70 | 18.37 | 64 | 0.00 | 85 |
| 135 | **Armenia** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 21 | **Australia** | 31.50 | 27 | 45 | 0.12 | 56 | 5,863.41 | 6 | 0.66 | 13 |
| 105 | **Austria** | 85.00 | 3 | 90 | 0.04 | 86 | 6.81 | 78 | 0.00 | 85 |
| 68 | **Azerbaijan** | 63.83 | 3 | 90 | 0.03 | 89 | 100.49 | 39 | 0.11 | 38 |
| 135 | **Bahrain** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 58 | **Bangladesh** | 60.83 | 122 | 22 | 0.07 | 72 | 19.75 | 63 | 0.01 | 68 |
| 82 | **Barbados** | 71.50 | 0 | 113 | 0.00 | 112 | 30.66 | 52 | 0.49 | 20 |
| 131 | **Belarus** | 104.50 | 0 | 113 | 0.00 | 112 | 0.12 | 120 | 0.00 | 85 |
| 73 | **Belgium** | 65.83 | 5 | 81 | 0.05 | 81 | 135.46 | 36 | 0.03 | 58 |
| 74 | **Belize** | 67.50 | 0 | 113 | 0.00 | 112 | 36.33 | 50 | 1.36 | 9 |
| 14 | **Benin** | 26.50 | 53 | 33 | 0.55 | 19 | 63.66 | 46 | 0.46 | 21 |
| 135 | **Bhutan** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 18 | **Bolivia** | 28.00 | 33 | 41 | 0.32 | 33 | 278.63 | 27 | 0.58 | 17 |
| 85 | **Bosnia and Herzegovina** | 75.17 | 3 | 90 | 0.08 | 70 | 3.69 | 85 | 0.01 | 68 |
| 135 | **Botswana** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 23 | **Brazil** | 33.83 | 429 | 5 | 0.22 | 44 | 1,233.36 | 16 | 0.06 | 47 |
| 135 | **Brunei Darussalam** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 125 | **Bulgaria** | 99.00 | 0 | 113 | 0.00 | 112 | 3.19 | 87 | 0.00 | 85 |
| 79 | **Burkina Faso** | 69.67 | 16 | 63 | 0.11 | 64 | 1.82 | 91 | 0.01 | 68 |
| 135 | **Burundi** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 39 | **Cambodia** | 47.33 | 8 | 74 | 0.06 | 77 | 208.24 | 32 | 0.69 | 12 |
| 93 | **Cameroon** | 81.00 | 13 | 66 | 0.06 | 77 | 1.40 | 96 | 0.00 | 85 |
| 71 | **Canada** | 65.17 | 7 | 76 | 0.02 | 95 | 549.40 | 23 | 0.04 | 51 |
| 135 | **Cape Verde** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 97 | **Central African Republic** | 81.67 | 3 | 90 | 0.06 | 77 | 0.35 | 110 | 0.01 | 68 |
| 42 | **Chad** | 49.50 | 27 | 45 | 0.26 | 38 | 8.14 | 74 | 0.04 | 51 |
| 135 | **Chile** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 9 | **China** | 23.50 | 2889 | 2 | 0.22 | 44 | 33,394.75 | 1 | 0.33 | 25 |
| 3 | **Colombia** | 8.00 | 320 | 7 | 0.70 | 12 | 7,543.56 | 5 | 1.73 | 6 |
| 135 | **Comoros** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 40 | **Cook Islands** | 48.67 | 3 | 90 | 27.27 | 2 | 20.00 | 62 | 0.01 | 68 |
| 20 | **Costa Rica** | 30.00 | 24 | 53 | 0.52 | 20 | 143.41 | 35 | 0.28 | 26 |
| 111 | **Cote d'Ivoire** | 87.50 | 11 | 71 | 0.05 | 81 | 0.08 | 122 | 0.00 | 85 |
| 84 | **Croatia** | 74.50 | 0 | 113 | 0.00 | 112 | 103.80 | 38 | 0.13 | 36 |
| 135 | **Cyprus** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 44 | **Czech Republic** | 52.17 | 10 | 72 | 0.10 | 65 | 259.44 | 29 | 0.10 | 41 |
| 97 | **Democratic Republic of Congo** | 81.67 | 27 | 45 | 0.04 | 86 | 0.71 | 103 | 0.00 | 85 |
| 135 | **Democratic Republic of Timor-Leste** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | **Denmark** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | **Djibouti** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 63 | **Dominica** | 63.17 | 0 | 113 | 0.00 | 112 | 100.00 | 40 | 10.50 | 1 |
| 121 | **Dominican Republic** | 95.50 | 1 | 105 | 0.01 | 106 | 3.56 | 86 | 0.00 | 85 |

| Rank CRI 2010 | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ (PPP) | | Losses in million USD per unit GDP (in %) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | Rank | Total | Rank | Total | Rank | Total | Rank |
| 112 | **Ecuador** | 87.67 | 4 | 83 | 0.03 | 89 | 1.44 | 95 | 0.00 | 85 |
| 63 | **Egypt** | 62.17 | 43 | 38 | 0.06 | 77 | 68.63 | 45 | 0.01 | 68 |
| 36 | **El Salvador** | 42.17 | 18 | 61 | 0.31 | 34 | 46.66 | 48 | 0.11 | 38 |
| 135 | **Equatorial Guinea** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | **Eritrea** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | **Estonia** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 108 | **Ethiopia** | 86.67 | 19 | 60 | 0.02 | 95 | 0.87 | 100 | 0.00 | 85 |
| 23 | **Fiji** | 33.83 | 3 | 90 | 0.34 | 32 | 97.49 | 41 | 2.44 | 4 |
| 92 | **Finland** | 80.33 | 0 | 113 | 0.00 | 112 | 78.48 | 43 | 0.04 | 51 |
| 135 | **Former Yugoslav Republic of Macedonia** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 26 | **France** | 35.17 | 75 | 29 | 0.12 | 56 | 4,782.52 | 8 | 0.22 | 31 |
| 128 | **Gabon** | 101.83 | 0 | 113 | 0.00 | 112 | 0.52 | 104 | 0.00 | 85 |
| 129 | **Georgia** | 102.67 | 0 | 113 | 0.00 | 112 | 0.39 | 109 | 0.00 | 85 |
| 46 | **Germany** | 53.17 | 28 | 44 | 0.03 | 89 | 2,351.57 | 11 | 0.08 | 43 |
| 33 | **Ghana** | 41.00 | 109 | 25 | 0.46 | 22 | 20.08 | 61 | 0.03 | 58 |
| 124 | **Greece** | 98.17 | 2 | 99 | 0.02 | 95 | 0.00 | 130 | 0.00 | 85 |
| 133 | **Grenada** | 105.50 | 0 | 113 | 0.00 | 112 | 0.02 | 126 | 0.00 | 85 |
| 2 | **Guatemala** | 6.33 | 229 | 12 | 1.59 | 4 | 1,969.65 | 12 | 2.80 | 3 |
| 102 | **Guinea** | 83.67 | 7 | 76 | 0.07 | 72 | 0.26 | 112 | 0.00 | 85 |
| 103 | **Guinea-Bissau** | 84.50 | 2 | 99 | 0.12 | 56 | 0.02 | 126 | 0.00 | 85 |
| 135 | **Guyana** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 28 | **Haiti** | 35.83 | 60 | 31 | 0.61 | 15 | 10.64 | 70 | 0.09 | 42 |
| 5 | **Honduras** | 14.67 | 139 | 19 | 1.73 | 3 | 219.79 | 31 | 0.65 | 16 |
| 135 | **Hong Kong SAR** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 69 | **Hungary** | 64.50 | 1 | 105 | 0.01 | 106 | 636.54 | 22 | 0.34 | 24 |
| 135 | **Iceland** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 31 | **India** | 39.50 | 1844 | 4 | 0.15 | 50 | 1,119.94 | 17 | 0.03 | 58 |
| 41 | **Indonesia** | 49.00 | 290 | 9 | 0.12 | 56 | 106.52 | 37 | 0.01 | 68 |
| 135 | **Iraq** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 134 | **Ireland** | 106.00 | 0 | 113 | 0.00 | 112 | 0.01 | 129 | 0.00 | 85 |
| 16 | **Islamic Republic of Afghanistan** | 26.83 | 401 | 6 | 1.33 | 5 | 22.44 | 59 | 0.08 | 43 |
| 123 | **Islamic Republic of Iran** | 97.00 | 8 | 74 | 0.01 | 106 | 0.02 | 126 | 0.00 | 85 |
| 12 | **Israel** | 24.83 | 45 | 37 | 0.61 | 15 | 517.91 | 24 | 0.24 | 29 |
| 110 | **Italy** | 87.33 | 13 | 66 | 0.02 | 95 | 1.30 | 98 | 0.00 | 85 |
| 22 | **Jamaica** | 32.67 | 13 | 66 | 0.48 | 21 | 88.99 | 42 | 0.37 | 23 |
| 90 | **Japan** | 77.67 | 21 | 55 | 0.02 | 95 | 32.90 | 51 | 0.00 | 85 |
| 135 | **Jordan** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 55 | **Kazakhstan** | 58.83 | 46 | 36 | 0.28 | 36 | 7.35 | 75 | 0.00 | 85 |
| 43 | **Kenya** | 49.67 | 93 | 26 | 0.23 | 41 | 14.53 | 66 | 0.02 | 62 |
| 135 | **Kiribati** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 100 | **Korea, Republic** | 83.17 | 10 | 72 | 0.02 | 95 | 14.45 | 67 | 0.00 | 85 |
| 132 | **Kuwait** | 105.33 | 0 | 113 | 0.00 | 112 | 0.05 | 125 | 0.00 | 85 |
| 130 | **Kyrgyz Republic** | 104.33 | 0 | 113 | 0.00 | 112 | 0.13 | 119 | 0.00 | 85 |
| 135 | **Lao People's Democratic Republic** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | **Latvia** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 103 | **Lebanon** | 84.50 | 1 | 105 | 0.03 | 89 | 3.04 | 88 | 0.01 | 68 |
| 91 | **Lesotho** | 79.83 | 4 | 83 | 0.16 | 48 | 0.00 | 130 | 0.00 | 85 |
| 116 | **Liberia** | 90.83 | 1 | 105 | 0.02 | 95 | 0.19 | 114 | 0.01 | 68 |
| 135 | **Libya** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 99 | **Lithuania** | 82.50 | 4 | 83 | 0.12 | 56 | 0.00 | 130 | 0.00 | 85 |
| 95 | **Luxembourg** | 81.33 | 0 | 113 | 0.00 | 112 | 23.18 | 57 | 0.06 | 47 |

| Rank CRI 2010 | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ (PPP) | | Losses in million USD per unit GDP (in %) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | Rank | Total | Rank | Total | Rank | Total | Rank |
| 27 | **Madagascar** | 35.83 | 86 | 27 | 0.40 | 27 | 22.61 | 58 | 0.11 | 38 |
| 105 | **Malawi** | 86.50 | 0 | 113 | 0.00 | 112 | 4.78 | 80 | 0.04 | 51 |
| 122 | **Malaysia** | 96.67 | 4 | 83 | 0.01 | 106 | 0.18 | 115 | 0.00 | 85 |
| 135 | **Maldives** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 62 | **Mali** | 62.00 | 25 | 52 | 0.19 | 47 | 1.83 | 90 | 0.01 | 68 |
| 135 | **Malta** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 37 | **Mauritania** | 43.50 | 21 | 55 | 0.66 | 14 | 3.70 | 84 | 0.06 | 47 |
| 135 | **Mauritius** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 17 | **Mexico** | 27.67 | 157 | 16 | 0.14 | 54 | 8,181.53 | 4 | 0.52 | 19 |
| 48 | **Moldova** | 55.50 | 1 | 105 | 0.03 | 89 | 160.60 | 34 | 1.46 | 8 |
| 135 | **Mongolia** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 47 | **Morocco** | 54.33 | 43 | 40 | 0.14 | 54 | 27.01 | 54 | 0.02 | 62 |
| 59 | **Mozambique** | 61.00 | 33 | 41 | 0.15 | 50 | 2.76 | 89 | 0.01 | 68 |
| 77 | **Myanmar** | 68.83 | 123 | 21 | 0.20 | 46 | 0.00 | 130 | 0.00 | 85 |
| 66 | **Namibia** | 63.33 | 12 | 69 | 0.57 | 18 | 0.47 | 105 | 0.00 | 85 |
| 56 | **Nepal** | 58.83 | 122 | 22 | 0.43 | 25 | 0.27 | 111 | 0.00 | 85 |
| 115 | **Netherlands** | 90.33 | 1 | 105 | 0.01 | 106 | 24.42 | 55 | 0.00 | 85 |
| 83 | **New Zealand** | 74.00 | 1 | 105 | 0.02 | 95 | 50.75 | 47 | 0.04 | 51 |
| 35 | **Nicaragua** | 41.83 | 59 | 32 | 1.01 | 7 | 4.31 | 81 | 0.02 | 62 |
| 61 | **Niger** | 61.50 | 7 | 76 | 0.05 | 81 | 17.23 | 65 | 0.15 | 33 |
| 54 | **Nigeria** | 58.67 | 133 | 20 | 0.09 | 68 | 20.85 | 60 | 0.01 | 68 |
| 135 | **Norway** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 6 | **Oman** | 17.00 | 24 | 53 | 0.81 | 11 | 1313.63 | 15 | 1.73 | 6 |
| 1 | **Pakistan** | 3.50 | 1891 | 3 | 1.10 | 6 | 25,315.99 | 2 | 5.42 | 2 |
| 75 | **Panama** | 68.17 | 16 | 63 | 0.45 | 23 | 0.00 | 130 | 0.00 | 85 |
| 119 | **Papua New Guinea** | 94.83 | 2 | 99 | 0.03 | 89 | 0.08 | 122 | 0.00 | 85 |
| 101 | **Paraguay** | 83.50 | 6 | 80 | 0.09 | 68 | 0.18 | 115 | 0.00 | 85 |
| 11 | **Peru** | 24.33 | 171 | 15 | 0.58 | 17 | 363.20 | 25 | 0.13 | 36 |
| 14 | **Philippines** | 26.50 | 244 | 11 | 0.26 | 38 | 970.86 | 18 | 0.26 | 27 |
| 7 | **Poland** | 17.83 | 151 | 18 | 0.40 | 27 | 4,745.06 | 9 | 0.66 | 13 |
| 8 | **Portugal** | 19.67 | 47 | 35 | 0.44 | 24 | 1,749.45 | 13 | 0.71 | 11 |
| 135 | **Qatar** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | **Republic of Congo** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 63 | **Republic of Yemen** | 62.17 | 61 | 30 | 0.25 | 40 | 1.73 | 93 | 0.00 | 85 |
| 23 | **Romania** | 33.83 | 26 | 51 | 0.12 | 56 | 1,676.05 | 14 | 0.66 | 13 |
| 4 | **Russia** | 11.00 | 56165 | 1 | 39.30 | 1 | 5,536.92 | 7 | 0.25 | 28 |
| 120 | **Rwanda** | 95.33 | 2 | 99 | 0.02 | 95 | 0.22 | 113 | 0.00 | 85 |
| 135 | **Samoa** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | **Sao Tome and Principe** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 57 | **Saudi Arabia** | 59.17 | 27 | 45 | 0.10 | 65 | 70.88 | 44 | 0.01 | 68 |
| 135 | **Senegal** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 109 | **Serbia, Montenegro, Kosovo** | 87.00 | 4 | 83 | 0.05 | 81 | 0.40 | 107 | 0.00 | 85 |
| 135 | **Seychelles** | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 81 | **Sierra Leone** | 71.17 | 16 | 63 | 0.27 | 37 | 0.12 | 120 | 0.00 | 85 |
| 112 | **Singapore** | 87.67 | 0 | 113 | 0.00 | 112 | 29.61 | 53 | 0.01 | 68 |
| 72 | **Slovak Republic** | 65.33 | 4 | 83 | 0.07 | 72 | 41.35 | 49 | 0.03 | 58 |
| 51 | **Slovenia** | 58.00 | 3 | 90 | 0.15 | 50 | 23.74 | 56 | 0.04 | 51 |
| 32 | **Solomon Islands** | 40.83 | 2 | 99 | 0.38 | 29 | 12.65 | 68 | 0.77 | 10 |
| 53 | **South Africa** | 58.17 | 115 | 24 | 0.23 | 41 | 8.20 | 73 | 0.00 | 85 |
| 60 | **Spain** | 61.17 | 21 | 55 | 0.05 | 81 | 342.51 | 26 | 0.02 | 62 |
| 49 | **Sri Lanka** | 56.67 | 76 | 28 | 0.37 | 30 | 4.26 | 82 | 0.00 | 85 |

| Rank CRI 2010 | Country | Overall CRI score | Death toll | | Deaths per 100,000 inhabitants | | Losses in million US$ (PPP) | | Losses in million USD per unit GDP (in %) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | Rank | Total | Rank | Total | Rank | Total | Rank |
| 135 | St. Kitts and Nevis | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | St. Lucia | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | St. Vincent and the Grenadines | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 76 | Sudan | 68.33 | 50 | 34 | 0.12 | 56 | 1.53 | 94 | 0.00 | 85 |
| 135 | Suriname | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | Swaziland | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | Sweden | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 118 | Switzerland | 92.67 | 1 | 105 | 0.01 | 106 | 11.79 | 69 | 0.00 | 85 |
| 126 | Syrian Arab Republic | 99.67 | 0 | 113 | 0.00 | 112 | 1.82 | 91 | 0.00 | 85 |
| 44 | Taiwan Province of China | 52.17 | 17 | 62 | 0.07 | 72 | 661.89 | 21 | 0.08 | 43 |
| 10 | Tajikistan | 24.17 | 27 | 45 | 0.35 | 31 | 262.13 | 28 | 1.77 | 5 |
| 135 | Tanzania | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 13 | Thailand | 25.17 | 261 | 10 | 0.41 | 26 | 799.19 | 19 | 0.14 | 35 |
| 49 | The Bahamas | 56.83 | 3 | 90 | 0.87 | 9 | 1.34 | 97 | 0.01 | 68 |
| 67 | The Gambia | 63.67 | 12 | 69 | 0.69 | 13 | 0.17 | 117 | 0.00 | 85 |
| 51 | Togo | 58.00 | 21 | 55 | 0.30 | 35 | 0.94 | 99 | 0.02 | 62 |
| 86 | Tonga | 76.00 | 0 | 113 | 0.00 | 112 | 4.15 | 83 | 0.55 | 18 |
| 127 | Trinidad and Tobago | 101.50 | 0 | 113 | 0.00 | 112 | 0.80 | 102 | 0.00 | 85 |
| 135 | Tunisia | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 88 | Turkey | 76.50 | 27 | 45 | 0.04 | 86 | 8.36 | 72 | 0.00 | 85 |
| 135 | Turkmenistan | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 29 | Uganda | 37.83 | 307 | 8 | 0.90 | 8 | 6.71 | 79 | 0.02 | 62 |
| 89 | Ukraine | 77.33 | 0 | 113 | 0.00 | 112 | 177.11 | 33 | 0.06 | 47 |
| 94 | United Arab Emirates | 81.17 | 5 | 81 | 0.10 | 65 | 0.45 | 106 | 0.00 | 85 |
| 70 | United Kingdom | 64.67 | 3 | 90 | 0.00 | 112 | 3856.43 | 10 | 0.18 | 32 |
| 30 | United States | 37.50 | 229 | 12 | 0.07 | 72 | 22,046.60 | 3 | 0.15 | 33 |
| 96 | Uruguay | 81.50 | 4 | 83 | 0.12 | 56 | 0.06 | 124 | 0.00 | 85 |
| 135 | Uzbekistan | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 135 | Vanuatu | 106.17 | 0 | 113 | 0.00 | 112 | 0.00 | 130 | 0.00 | 85 |
| 38 | Venezuela | 43.33 | 43 | 38 | 0.15 | 50 | 240.39 | 30 | 0.07 | 46 |
| 19 | Vietnam | 29.00 | 203 | 14 | 0.23 | 41 | 667.24 | 20 | 0.24 | 29 |
| 80 | Zambia | 70.33 | 21 | 55 | 0.16 | 48 | 0.81 | 101 | 0.00 | 85 |
| 114 | Zimbabwe | 88.67 | 2 | 99 | 0.02 | 95 | 0.40 | 107 | 0.01 | 68 |

## Germanwatch

Following the motto "Observing, Analysing, Acting", Germanwatch has been actively promoting North-South equity and the preservation of livelihoods since 1991. In doing so, we focus on the politics and economics of the North with their worldwide consequences. The situation of marginalised people in the South is the starting point of our work. Together with our members and supporters as well as with other actors in civil society we intend to represent a strong lobby for sustainable development. We endeavour to approach our aims by advocating fair trade relations, responsible financial markets, compliance with human rights, and the prevention of dangerous climate change.
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