

# GLOBAL CLIMATE RISK INDEX 2011

WHO SUFFERS MOST FROM EXTREME WEATHER  
EVENTS? WEATHER-RELATED LOSS EVENTS IN 2009  
AND 1990 TO 2009

Sven Harmeling



## Summary

As in previous years, the Global Climate Risk Index 2011 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 2009 as well as for the period 1990-2009 were taken into account.

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 CRI 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 2009, this was in particular the case for Saudi Arabia.

Many developing countries have increased their efforts to prepare for disasters and to adapt to climate change. Numerous options for pro-active prevention exist, also risk transfer schemes such as regional or international insurance attract much higher attention, for those events where the impacts cannot be reduced in a cost effective way. The right design of insurance solutions can send a strong incentive signal for proactive adaptation. The provision of institutional and financial support for vulnerable countries should be increased in the near future, and the adoption of an ambitious Adaptation Framework for Implementation in Cancún at COP16 could be an important catalyst for that.

## Imprint

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## How to read the Germanwatch 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. It represents one important piece in the overall, more comprehensive puzzle of climate-related impacts and associated vulnerabilities, for example, 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. For these reasons, African countries feature relatively low on the Climate Risk Index.

**Key messages:**

- According to the Germanwatch Global Climate Risk Index, Bangladesh, Myanmar and Honduras were the countries most affected by extreme weather events from 1990 to 2009;
- All of the ten most affected countries (1990-2009) were developing countries in the low-income or lower-middle income country group;
- In total, more than 650,000 people died as a direct consequence from almost 14,000 extreme weather events, and losses of more than 2.1 trillion USD (in PPP) occurred from 1990 to 2009
- In 2009, the ranking of the most affected countries was led by El Salvador, Chinese Taipei, the Philippines, Viet Nam and Saudi Arabia;
- Anthropogenic climate change is expected to lead to further increases in precipitation extremes, in heavy precipitation and in drought;
- 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. Regional insurance approaches can valuably complement proactive adaptation. If the current lack of ambition in emission mitigation will prevail, more and more countries face in future decades the limits of adaptation and have to face increasing residual losses and damages in spite of adaptation efforts.
- Through the adoption of an ambitious Adaptation Framework for Implementation underpinned by reliable and adequate finance, COP16 can provide the prospect for scaled-up financial and institutional support to assist particularly vulnerable countries in their efforts to prepare for more severe extreme weather events.

## **1. Key results of the Global Climate Risk Index 2011**

While the biggest climate summit ever in Copenhagen was categorised by limited results and frustration, one year later there is no doubt that the urgency of climate science requires urgent action, on the political as well as on the implementation level. Since 1990, more than 650,000 people worldwide died from extreme weather events, and losses of more than US\$ 2.1 trillion (ppp) occurred globally. At the same time there is broad agreement that enhanced disaster prevention is economically efficient, as one dollar invested into prevention is estimated to save between US\$ 2.5 and 13 of disaster aid.<sup>1</sup> While the number of large catastrophes and their impacts increased significantly, the same has been true for small and medium-sized disasters. This is especially challenging for humanitarian aid, since climate-related losses have grown rapidly, while low public attention to small- and medium-sized events results in limited funding.

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<sup>1</sup> DfID, 2005: Natural Disaster and Disaster Risk Reduction Measures. A Desk Review of Costs and Benefits. Draft Final Report. 8 December 2005.

The **Global Climate Risk Index (CRI)** developed by Germanwatch analyses the quantified impacts of extreme weather events<sup>2</sup> - 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.

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<sup>3</sup>, based on the most reliable quantified data.

**Countries most affected in the period of 1990-2009: Bangladesh, Myanmar and Honduras** have been identified to be the most affected.<sup>4</sup> They are followed by **Nicaragua, Viet Nam, Haiti and the Philippines**. Table 1 shows the ten most affected countries (Down 10) of the last decade, with their average, weighted ranking (CRI score) and the specific results in the four indicators analysed.

**Table 1: The Long-Term Climate Risk Index (CRI): Results (annual averages) in specific indicators in the 10 countries most affected in 1990 to 2009.**

CRI 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
1	Bangladesh	7.33	7849	5.63	2,068.14	1.67	259
2	Myanmar	8.67	7124	14.33	676.35	2.04	30
3	Honduras	10.83	322	5.21	663.57	3.12	53
4	Nicaragua	16.17	157	2.80	263.33	2.05	39
5	Vietnam	19.00	457	0.59	1,861.50	1.31	203
6	Haiti	19.67	338	3.98	164.62	1.20	46
7	Philippines	26.83	821	1.08	684.45	0.35	270
8	Dominican Republic	27.67	212	2.55	185.08	0.40	41
9	Mongolia	31.00	13	0.54	308.65	5.19	30
10	Tajikistan	33.50	30	0.47	311.27	2.93	51

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 (Italy primarily as a consequence of the extreme heat wave in 2003). Particularly in relative terms, poorer developing countries are hit much harder. These results underscore the particular vulnerability of

<sup>2</sup> 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

<sup>3</sup> 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>

<sup>4</sup> 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 2009: El Salvador, Chinese Taipei (Taiwan) and the Philippines** have been identified to be the most affected countries last year.<sup>5</sup> They are followed by **Viet Nam, Saudi Arabia and Australia**.<sup>6</sup> Table 1 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 2009: the 10 most affected countries**

Ranking 2009 (2008)	Country	CRI score	Death toll	Deaths per 100,000 inhabitants	Absolute losses (in US\$ PPP)	Losses per unit GDP	Human Development Index <sup>7</sup>
1 (92)	El Salvador	4.33	198	3.40	1,827.00	4.27	90
2 (-)	Chinese Taipei	6.67	544	2.35	6,603.28	0.90	-
3 (4)	Philippines	9.50	1231	1.33	2,675.22	0.83	97
4 (3)	Viet Nam	10.83	334	0.38	2,943.05	1.15	113
5 (94)	Saudi Arabia	12.50	500	1.96	1,467.93	0.25	55
6 (26)	Australia	13.17	572	2.61	1,522.54	0.18	2
7 (116)	Cambodia	16.50	52	0.37	345.10	1.22	124
8 (51)	Bangladesh	18.33	379	0.23	970.95	0.40	129
9 (11)	Nepal	18.83	198	0.71	162.06	0.48	138
10 (61)	Bhutan	20.33	12	1.78	83.17	2.36	-

While the Philippines and Viet Nam usually appear high in the CRI (see the analysis for 1990 to 2009), El Salvador, Chinese Taipei, Saudi Arabia and Australia have been hit extraordinarily hard in 2009.

In the case of El Salvador, it was Hurricane Ida which struck the country in November 2009 and killed almost 200 people and caused significant losses. In the case of Chinese Taipei (Taiwan) it was Typhoon Morakot which caused major losses and damages in August 2009. Also in November 2009, a flash flood in the west of Saudi Arabia killed 500 people and destroyed thousands of houses and other assets.. In just four hours, the heaviest rainfall in Saudi Arabia in a decade produced twice the annual precipitation average.<sup>8</sup> In Australia in particular heat waves caused the majority of the more than 570 victims from weather-related catastrophes and caused losses of more than US\$ one billion.

<sup>5</sup> The full rankings can be found in the Annexes.

<sup>6</sup> The full rankings can be found in the Annexes.

<sup>7</sup> UNDP, 2010: Human Development Report, <http://hdr.undp.org/en/statistics/>

<sup>8</sup> See quotes in [http://en.wikipedia.org/wiki/2009\\_Jeddah\\_floods](http://en.wikipedia.org/wiki/2009_Jeddah_floods)

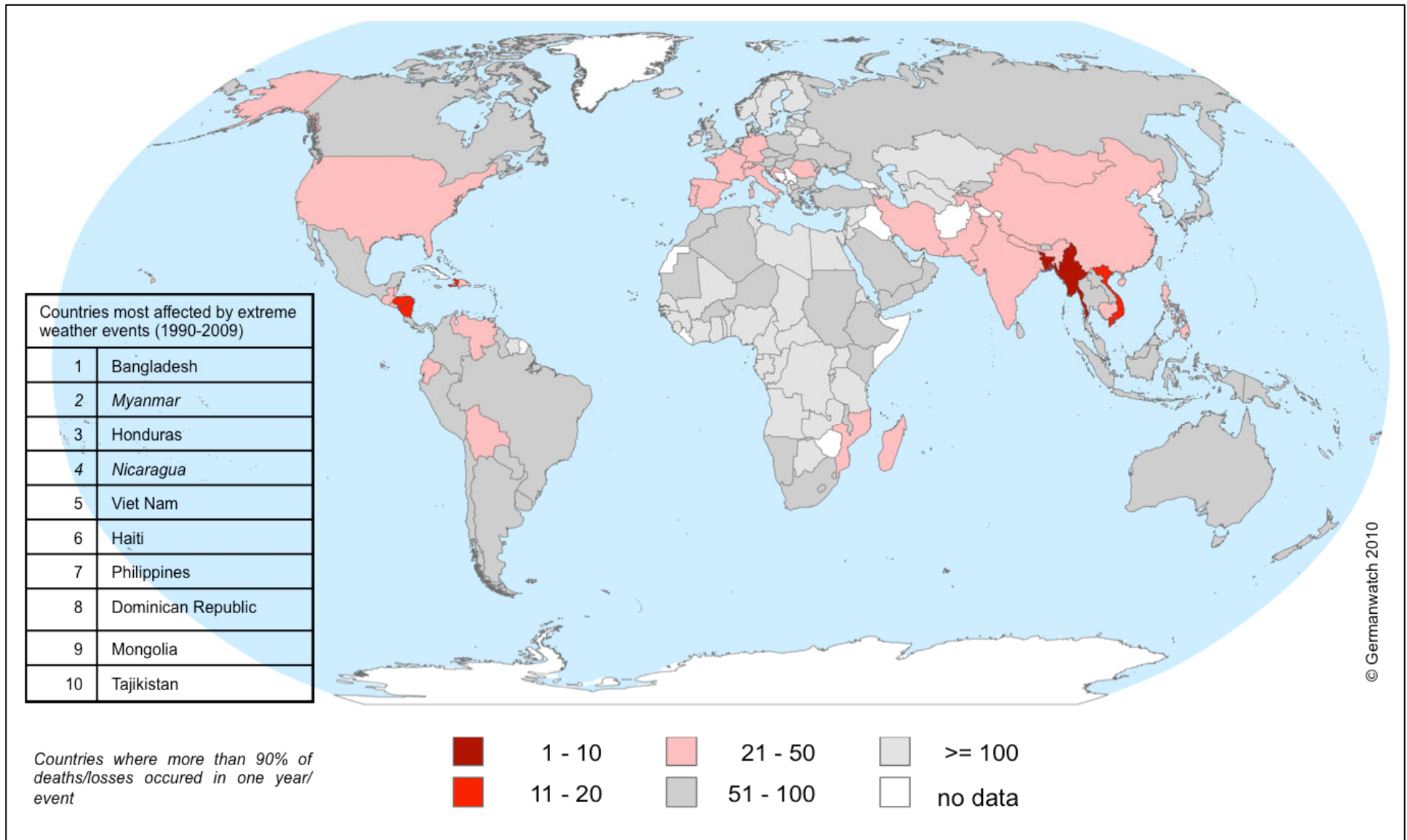
### **Exceptional catastrophes or continuous threats?**

The Global Climate Risk Index for 1990 to 2009 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. The examples Chinese Taipei and Saudi Arabia also fit into the second group in the year 2009.

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.

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.





**Figure 1: World Map of the Global Climate Risk Index 1990-2009**

Source: Germanwatch and Munich Re NatCatSERVICE

## 2. Impacts in Central America and the Caribbean region

Cancún as the host of COP16 is situated in a world region which is frequently hit by hurricanes. Table 3 lists the 10 countries from the region which rank highest in the Climate Risk Index for the period from 1990-2009. The figures for other countries from the region can be found in the Annexes. While the relationship between climate change and its impacts on the frequency, intensity and pattern of tropical cyclones is complex and still subject to active research, recent publications indicate “that greenhouse warming will cause the globally averaged intensity of tropical cyclones to shift towards stronger storms”.<sup>9</sup> In particular the higher-class hurricanes are those which bring about the most severe impacts and overwhelm poor countries’ capacity to adapt and respond, and in the worst cases can throw back countries for years in their development progress. This was the case in Honduras and Guatemala through Hurricane Mitch in 1998.

**Table 3: Countries from Central America and the Caribbean in the CRI 1990-2009**

Ranking CRI	Country	CRI score	Death toll	Deaths per 100,000 inhabitants	Absolute losses (in US\$ PPP)	Losses per unit GDP	Number of events
3	Honduras	10.83	322	5.21	663.57	3.12	53
4	Nicaragua	16.17	157	2.80	263.33	2.05	39
6	Haiti	19.67	338	3.98	164.62	1.20	46
8	Dominican Republic	27.67	212	2.55	185.08	0.40	41
14	Grenada	35.50	2	1.99	89.15	11.44	6
17	El Salvador	38.17	31	0.57	214.80	0.71	33
20	Guatemala	40.83	74	0.68	149.53	0.32	55
24	Belize	43.17	2	0.95	55.72	3.76	11
28	Antigua and Barbuda	45.67	1	1.27	38.93	4.16	6
38	The Bahamas	49.00	1	0.38	211.39	3.32	17

<sup>9</sup> Knutson, T.R. J. L. McBride, J. Chan, K. Emanuel, G. Holland, C. Landsea, I. Held, J. P. Kossin, A. K. Srivastava & M. Sugi, 2010: Tropical cyclones and climate change. *Nature Geoscience* 3, 157 - 163 (2010). Published online: 21 February 2010. <http://www.nature.com/ngeo/journal/v3/n3/full/ngeo779.html>

## 3. Ways forward: Disaster prevention and climate insurance

### 3.1 How are most affected countries taking action?

Ranking high on the Climate Risk Index is not an exact expression of the physical severity of extreme events. A high vulnerability of a society can result in greater losses and fatalities with a meteorologically medium-impact event than a meteorologically high-impact event in a less vulnerable country. That is why it is important to also consider and learn from how certain countries have been taking action to better prepare for such disasters and adapt to climate change. One interesting qualitative approach used for judging progress on risk reduction is an assessment prepared in the context of the UN International Strategy for Disaster Reduction (UN ISDR). It has analysed in a qualitative manner the progress of the implementation of the Hyogo Framework of Action (HFA) which was adopted in 2005, and which maps out ways forward on risk reduction. For five out of the ten most affected countries in the period 1990 to 2009 such assessments are available and their results are given in table .<sup>10</sup> With the highest available score being 5, and the table reveals that in particular the Dominican Republic has performed relatively weak, while Viet Nam is judged to be the most progressive out of these five highly impacted countries in this assessment.

**Table 4: CRI Down 10 countries and their disaster risk reduction progress**

CRI	Country	Level of Progress - HFA Priority 1	Level of Progress - HFA Priority 2	Level of Progress - HFA Priority 3	Level of Progress - HFA Priority 4	Level of Progress - HFA Priority 5
1	Bangladesh	3,25	3,25	3,25	2,67	3,50
5	Viet Nam	4,00	3,25	3,25	3,33	4,00
7	Philippines	3,00	2,50	2,25	2,00	2,75
8	Dominican Republic	2,75	1,50	1,25	1,00	2,50
10	Tajikistan	3,00	3,75	2,75	3,17	3,50

HFA1: Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation.

HFA2: Identify, assess and monitor disaster risks and enhance early warning.

HFA3: Use knowledge, innovation and education to build a culture of safety and resilience at all levels.

HFA4: Reduce the underlying risk factors.

HFA5: Strengthen disaster preparedness for effective response at all levels.

Source: own compilation based on Hyogo Framework for Action Progress Reports, <http://www.preventionweb.net/english/hyogo/progress/?pid:224&pil:1>

<sup>10</sup> See Hyogo Framework for Action Progress Reports, <http://www.preventionweb.net/english/hyogo/progress/?pid:224&pil:1>

There is an increasing recognition that disaster risk reduction and adaptation to climate change can generate multiple benefits. Numerous options for action exist. The 2009 Global Assessment Report on Disaster Risk Reduction (GAR) outlined a 20-point plan to reduce risks, with measures proposed on different political levels.<sup>11</sup>

### **3.2 *Climate Insurance: Complementing proactive adaptation on the regional level?***

While putting as much efforts as possible into proactive disaster preparedness and adaptation to climate change, there is no doubt that damages and fatalities will continue to occur. Even those countries who are relatively progressive in terms of their preparedness policies always face the risk that one extraordinary extreme event can throw them back many years in their development. Guatemala and Honduras stand as examples for countries which have suffered severely from one single event, Hurricane Mitch. One approach to share risks is to transfer risks from climate-related extremes. In this regard, the Caribbean Climate Risk Insurance Facility (CCRIF) provides a very interesting example. It is a not-for-profit insurance vehicle, owned by a Trust benefiting the 16 CARICOM governments participating in the pooling scheme. The aim of the pool is to provide liquidity to countries after an event, so that governmental services can stay intact and spearhead reconstruction efforts. Other key characteristics are<sup>12</sup>:

- To trigger an insurance payout, CCRIF uses a catastrophe model to estimate the loss for any actual events, with the same model, calibrated against real historical events and losses, used to evaluate the risk and price the insurance contract; this design creates an incentive for enhanced adaptation activities in the region.
- By pooling the risks of its members, CCRIF serves as a risk aggregator and can thus provide insurance coverage at a comparatively low premium:
- CCRIF member countries can decide on the level of coverage for each peril insured.

While the Facility is governed by a Board of Directors, the operational and risk management functions of the pool are carried out by a private risk management company. Its main tasks include risk and financial modelling, calculation of the parametric loss in case of an event, and settlement and adjudication in case of a payout, policy sales and premium collection and others.

Only recently, the CCRIF completed insurance payments to Barbados, St. Lucia and St. Vincent & the Grenadines following the passage of the Tropical Cyclone Tomas on 30 and 31 October.<sup>13</sup> First payments could be made only 7 days after the disaster, which

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<sup>11</sup> See [http://www.preventionweb.net/files/9414\\_GARsummary.pdf](http://www.preventionweb.net/files/9414_GARsummary.pdf) for a summary; the 2011 Global Assessment Report is in preparation.

<sup>12</sup> See Warner, K. et al., 2010: Solutions for Vulnerable Countries and People. Designing and Implementing Disaster Risk Reduction & Insurance for Adaptation. MCII Policy Brief. July 2010.

<sup>13</sup> <http://www.ccrif.org/news/caribbean-governments-receive-us128m-insurance-payout-ccrif-following-passage-tomas>

facilitated “urgent restoration of services and clearing of the affected areas.” In total, US\$ 12.8 million were released to the three countries.

The disastrous floodings in Pakistan earlier this year, to the contrary, showcased an example where relatively long time passed by until external emergency aid reached the country, due to donor’s hesitance to what extent Pakistan should be helped. An insurance scheme such as that under the CCRIF could have resulted in relatively rapid payouts, based on an objective system relying on specific indicators and data.<sup>14</sup>

Of course, such regional insurance schemes have to be designed in a way that they combine the insurance function with incentives for pro-active action and avoid moral hazard which makes countries neglect effective risk prevention.

Promoting and fostering such regional insurance schemes as a complement to pro-active adaptation should be pursued and incentivised also through an ambitious Adaptation Framework for Implementation under the UNFCCC – which is on the Cancún agenda -, possibly as part of an international mechanism to address loss and damages from *inter alia* extreme weather events.<sup>15</sup> Piloting such approaches through fast start finance for particularly vulnerable developing countries which express their interest could help generating important lessons learnt on how to design such schemes in a cost-effective manner. Such catastrophe pools were also proposed in the GAR 20-point plan to reduce risk. Nevertheless, they should be adequately supported by developed countries in the future as part of their responsibility for possibly increasing threats as a consequence of climate change. It would not be fair to let poor countries pay the likely increasing insurance premiums in the future, when climate change impacts become more and more severe.

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<sup>14</sup> [http://www.climate-insurance.org/upload/pdf/201010\\_How\\_A\\_Global\\_Insurance\\_Scheme\\_Could\\_Have\\_Helped\\_Flood-Hit\\_Pakistan.pdf](http://www.climate-insurance.org/upload/pdf/201010_How_A_Global_Insurance_Scheme_Could_Have_Helped_Flood-Hit_Pakistan.pdf)

<sup>15</sup> See Harmeling, S. et al., 2010: International Action on adaptation and climate change: What roads from Copenhagen to Cancún? <http://www.germanwatch.org/klima/ad-cph-canc.pdf>

## 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 was 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 2009 and 1990-2009, but only takes into account countries which are Parties to the United Nations Framework Convention on Climate Change (UNFCCC) (with the exception of Chinese Taipei which is addressed because of its population and economic power). 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; n/a = no data available

**Table 5: Climate Risk Index for 1990-2009**

	Country	Overall CRI score	Death toll		Deaths per 100,000 inhabitants		Losses in million US\$ PPP		Losses per GDP in %	
			Total	Rank	Total	Rank	Total	Rank	Total	Rank
n/a	<b>Afghanistan</b>	n/a	339	14	1,61	13	0,00	n/a	n/a	n/a
134	<b>Albania</b>	116,33	2	127	0,06	113	12,08	121	0,07	112
89	<b>Algeria</b>	86,33	73	38	0,24	61	41,46	86	0,03	136
119	<b>Angola</b>	110,50	14	73	0,10	91	10,99	122	0,02	143
30	<b>Antigua and Barbuda</b>	45,67	1	140	1,27	17	38,93	88	4,16	6
92	<b>Argentina</b>	87,17	26	66	0,07	107	349,90	33	0,09	105
136	<b>Armenia</b>	117,00	0	150	0,01	156	32,99	98	0,20	71
44	<b>Australia</b>	52,83	45	48	0,23	62	1291,68	15	0,23	65
50	<b>Austria</b>	56,33	30	62	0,38	48	400,62	28	0,17	76
126	<b>Azerbaijan</b>	114,17	2	120	0,03	139	55,72	81	0,10	103
116	<b>Bahrain</b>	107,17	4	109	0,54	33	0,79	160	0,01	154
1	<b>Bangladesh</b>	7,33	7849	1	5,63	3	2068,14	7	1,67	15
155	<b>Barbados</b>	147,17	0	168	0,02	148	1,57	153	0,04	133
144	<b>Belarus</b>	123,17	4	104	0,04	131	29,46	101	0,03	136
62	<b>Belgium</b>	69,50	86	33	0,84	22	89,03	68	0,03	136
24	<b>Belize</b>	43,17	2	120	0,95	21	55,72	81	3,76	8
157	<b>Benin</b>	149,33	1	135	0,02	148	1,06	157	0,01	154
79	<b>Bhutan</b>	78,17	2	123	0,40	45	4,84	144	0,28	56
32	<b>Bolivia</b>	46,33	34	56	0,41	44	126,06	58	0,46	38
n/a	<b>Bosnia and Herzegovina</b>	n/a	0	158	0,01	156	0,00	n/a	0,38	44
112	<b>Botswana</b>	103,67	2	131	0,09	95	17,81	113	0,12	94
99	<b>Brazil</b>	91,83	102	27	0,06	113	472,71	26	0,03	136
164	<b>Brunei Darussalam</b>	155,83	0	164	0,03	139	0,32	163	0,00	165
90	<b>Bulgaria</b>	87,00	5	100	0,06	113	181,22	50	0,19	73
104	<b>Burkina Faso</b>	94,33	5	102	0,04	131	34,36	94	0,31	54
87	<b>Burundi</b>	84,83	7	89	0,10	91	7,54	136	0,32	51
31	<b>Cambodia</b>	45,83	38	54	0,31	53	106,78	61	0,77	27
147	<b>Cameroon</b>	130,33	6	95	0,04	131	6,70	139	0,02	143
107	<b>Canada</b>	97,33	12	76	0,04	131	642,48	22	0,07	112
118	<b>Cape Verde</b>	110,17	0	160	0,03	139	3,81	145	0,41	39
161	<b>Central African Republic</b>	152,50	1	146	0,02	148	0,27	165	0,01	154
111	<b>Chad</b>	102,00	4	114	0,05	121	19,50	110	0,19	73
95	<b>Chile</b>	88,50	16	70	0,10	91	124,36	59	0,08	110
15	<b>China</b>	35,67	2020	4	0,16	75	28266,79	2	0,73	29
46	<b>Chinese Taipei</b>	54,83	73	39	0,33	53	651,07	22	0,15	81
94	<b>Colombia</b>	88,33	87	32	0,22	64	51,32	84	0,02	143
169	<b>Comoros</b>	165,67	0	170	0,00	162	0,00	170	0,00	165
61	<b>Costa Rica</b>	69,17	9	84	0,23	62	65,53	77	0,23	65
151	<b>Cote d'Ivoire</b>	142,83	4	107	0,02	148	3,15	146	0,01	154
35	<b>Croatia</b>	47,50	35	55	0,78	24	142,82	56	0,24	63
99	<b>Cyprus</b>	91,83	4	109	0,52	36	9,30	132	0,06	119
64	<b>Czech Republic</b>	70,67	8	86	0,07	107	605,90	24	0,33	50
148	<b>Democratic Republic of Congo</b>	135,17	14	71	0,03	139	1,12	154	0,01	154

	Country	Overall CRI score	Death toll		Deaths per 100,000 inhabitants		Losses in million US\$ PPP		Losses per GDP in %	
			Total	Rank	Total	Rank	Total	Rank	Total	Rank
166	Democratic Republic of Timor-Leste	162,33	0	164	0,01	156	0,07	168	0,00	165
120	Denmark	110,83	1	145	0,02	148	199,68	46	0,13	89
39	Djibouti	49,83	9	83	1,33	16	10,11	128	0,76	28
56	Dominica	59,33	0	155	0,35	50	34,89	93	6,73	4
8	Dominican Republic	27,67	212	19	2,55	8	185,08	49	0,40	41
18	Ecuador	39,00	63	40	0,51	38	292,19	36	0,40	41
130	Egypt	115,00	40	50	0,06	113	25,19	106	0,01	154
17	El Salvador	38,17	31	61	0,57	32	214,80	44	0,71	30
169	Equatorial Guinea	165,67	0	170	0,00	162	0,00	170	0,00	165
115	Eritrea	106,17	0	160	0,00	162	28,23	103	0,89	25
141	Estonia	122,17	0	150	0,03	139	22,71	109	0,11	98
90	Ethiopia	87,00	91	30	0,14	82	26,13	104	0,07	112
36	Fiji	48,00	6	94	0,74	25	29,91	100	1,05	22
162	Finland	154,50	0	160	0,00	162	7,55	135	0,01	154
99	Former Yugoslav Republic of Macedonia	91,83	1	143	0,04	131	70,79	76	0,52	35
22	France	42,33	964	7	1,63	12	1454,74	13	0,09	105
168	Gabon	165,50	0	170	0,00	162	0,01	169	0,00	165
n/a	Georgia	n/a	4	112	0,08	103	0,00	n/a	0,38	44
28	Germany	45,50	477	10	0,58	31	2275,24	5	0,11	98
128	Ghana	114,50	11	78	0,06	113	9,16	133	0,05	125
67	Greece	72,67	14	72	0,13	85	353,92	32	0,15	81
14	Grenada	35,50	2	126	1,99	9	89,15	67	11,44	1
20	Guatemala	40,83	74	37	0,68	26	149,53	54	0,32	51
156	Guinea	148,33	2	127	0,02	148	0,87	159	0,01	154
132	Guinea-Bissau	116,00	0	170	0,00	162	7,34	136	0,55	33
96	Guyana	89,50	0	152	0,04	131	41,86	85	1,25	19
6	Haiti	19,67	338	15	3,98	5	164,62	53	1,20	20
3	Honduras	10,83	322	16	5,21	4	663,57	21	3,12	10
169	Hong Kong SAR	165,67	0	170	0,00	162	0,00	170	0,00	165
60	Hungary	66,83	34	57	0,33	52	167,26	52	0,12	94
117	Iceland	108,00	2	129	0,63	28	1,09	155	0,01	154
12	India	34,33	3244	3	0,31	53	6313,38	3	0,35	47
41	Indonesia	50,67	293	17	0,14	82	1694,02	11	0,28	56
26	Iran	45,17	87	31	0,14	82	2377,57	4	0,47	36
n/a	Iraq	n/a	1	141	0,00	162	0,00	n/a	n/a	n/a
124	Ireland	113,00	2	125	0,05	121	75,47	73	0,06	119
121	Israel	111,50	3	118	0,05	121	80,32	71	0,06	119
18	Italy	39,00	1006	6	1,75	10	1579,16	12	0,11	98
55	Jamaica	59,00	4	105	0,16	75	175,51	51	0,91	24
85	Japan	82,50	71	39	0,06	113	2154,02	6	0,07	112
139	Jordan	121,00	3	119	0,05	121	10,14	127	0,06	119
123	Kazakhstan	111,67	10	80	0,07	107	36,58	90	0,02	143
70	Kenya	74,67	46	47	0,15	80	63,96	79	0,15	81
113	Kiribati	104,17	0	170	0,00	162	17,34	117	4,15	7
48	Korea, Republic	55,67	102	28	0,22	64	1220,45	16	0,15	81
158	Kuwait	150,33	1	143	0,04	131	0,08	167	0,00	165
63	Kyrgyz Republic	70,17	19	69	0,39	47	17,40	116	0,20	71
68	Lao People's Democratic Republic	73,83	3	115	0,07	107	78,10	72	1,07	21

	Country	Overall CRI score	Death toll		Deaths per 100,000 inhabitants		Losses in million US\$ PPP		Losses per GDP in %	
			Total	Rank	Total	Rank	Total	Rank	Total	Rank
71	Latvia	75,00	4	105	0,17	70	73,75	75	0,23	65
135	Lebanon	116,67	2	124	0,07	107	18,72	112	0,05	125
88	Lesotho	86,00	1	135	0,05	121	25,21	105	1,31	17
n/a	Liberia	n/a	0	155	0,01	156	0,00	n/a	n/a	n/a
165	Libya	157,00	0	170	0,00	162	6,57	140	0,01	154
121	Lithuania	111,50	2	120	0,07	107	33,12	97	0,06	119
73	Luxembourg	76,00	7	93	1,49	14	18,78	111	0,07	112
21	Madagascar	42,00	79	36	0,49	39	75,18	74	0,58	32
49	Malawi	56,00	30	63	0,26	59	38,54	89	0,55	33
77	Malaysia	77,67	42	49	0,18	69	149,03	55	0,07	112
145	Maldives	127,83	0	170	0,00	162	2,25	151	0,25	61
125	Mali	113,50	3	116	0,03	139	12,75	119	0,14	84
159	Malta	151,17	0	170	0,00	162	3,08	147	0,04	133
98	Mauritania	90,50	3	117	0,12	89	10,40	126	0,25	61
106	Mauritius	95,50	1	148	0,05	121	35,53	91	0,37	46
45	Mexico	54,83	154	21	0,16	75	1891,47	8	0,18	75
40	Moldova	50,50	7	91	0,17	70	188,99	48	2,12	12
9	Mongolia	31,00	13	75	0,54	33	308,65	35	5,19	5
85	Morocco	82,50	25	67	0,09	95	111,43	60	0,13	89
16	Mozambique	37,33	86	34	0,49	39	90,85	66	0,97	23
2	Myanmar	8,67	7124	2	14,33	1	676,35	20	2,04	14
80	Namibia	79,00	7	87	0,42	43	10,98	123	0,13	89
11	Nepal	34,00	268	18	1,12	19	81,86	70	0,41	39
59	Netherlands	65,17	86	34	0,54	33	237,60	41	0,05	125
74	New Zealand	76,83	4	112	0,09	95	219,97	43	0,27	58
4	Nicaragua	16,17	157	20	2,80	6	263,33	39	2,05	13
83	Niger	81,67	7	90	0,06	113	29,36	102	0,47	36
137	Nigeria	118,67	40	52	0,03	139	33,21	96	0,02	143
n/a	Niue	n/a	0	168	n/a	n/a		n/a	n/a	n/a
145	Norway	127,83	1	134	0,03	139	51,78	83	0,03	136
42	Oman	51,67	5	99	0,22	64	374,11	31	0,86	26
37	Pakistan	48,33	470	11	0,35	50	437,51	27	0,17	76
105	Panama	95,33	9	82	0,30	55	9,74	130	0,05	125
43	Papua New Guinea	52,17	34	58	0,67	27	30,14	99	0,32	51
92	Paraguay	87,17	6	96	0,11	90	34,02	95	0,17	76
47	Peru	55,50	102	28	0,40	45	197,90	47	0,14	84
7	Philippines	26,83	821	8	1,08	20	684,45	19	0,35	47
65	Poland	71,00	39	53	0,10	91	634,93	23	0,14	84
27	Portugal	45,33	140	22	1,37	15	235,77	42	0,13	89
169	Qatar	165,67	0	170	0,00	162	0,00	170	0,00	165
131	Republic of Congo	115,83	8	85	0,27	58	0,29	164	0,00	165
53	Republic of Yemen	58,00	50	46	0,28	57	100,82	62	0,24	63
28	Romania	45,50	57	43	0,26	59	766,22	18	0,35	47
66	Russia	72,17	124	24	0,09	95	1888,35	9	0,09	105
114	Rwanda	105,83	7	91	0,08	103	6,30	142	0,11	98
33	Samoa	46,83	1	139	0,61	29	57,31	80	8,09	2
169	Sao Tome and Principe	165,67	0	170	0,00	162	0,00	170	0,00	165
102	Saudi Arabia	93,33	32	59	0,16	75	91,10	65	0,02	143
142	Senegal	122,33	5	101	0,05	121	6,45	141	0,05	125
n/a	Serbia, Montenegro, Kosovo	n/a	0	152	n/a	n/a	0,00	n/a	n/a	n/a
163	Seychelles	154,67	0	170	0,00	162	0,35	162	0,03	136
126	Sierra Leone	114,17	7	88	0,16	75	0,62	161	0,02	143
167	Singapore	162,67	0	164	0,00	162	0,91	158	0,00	165

	Country	Overall CRI score	Death toll		Deaths per 100,000 inhabitants		Losses in million US\$ PPP		Losses per GDP in %	
			Total	Rank	Total	Rank	Total	Rank	Total	Rank
102	<b>Slovak Republic</b>	93,33	4	103	0,08	103	96,71	63	0,12	94
49	<b>Slovenia</b>	56,00	12	77	0,59	30	85,90	69	0,23	65
57	<b>Solomon Islands</b>	59,50	11	79	2,56	7	2,86	148	0,27	58
n/a	<b>Somalia</b>	n/a	118	25	n/a	n/a	n/a	n/a	n/a	n/a
75	<b>South Africa</b>	77,17	55	45	0,13	85	278,82	38	0,09	105
22	<b>Spain</b>	42,33	705	9	1,72	11	975,00	17	0,10	103
77	<b>Sri Lanka</b>	77,67	31	60	0,17	70	64,28	78	0,12	94
51	<b>St. Kitts and Nevis</b>	56,67	0	158	0,44	42	35,42	92	7,12	3
82	<b>St. Lucia</b>	80,67	0	152	0,19	68	8,00	134	0,64	31
72	<b>St. Vincent and the Grenadines</b>	75,17	1	148	0,52	36	2,67	149	0,40	41
75	<b>Sudan</b>	77,17	40	51	0,13	85	94,00	64	0,13	89
160	<b>Suriname</b>	152,00	0	160	0,03	139	0,17	166	0,01	154
108	<b>Swaziland</b>	98,67	1	141	0,09	95	9,31	131	0,23	65
143	<b>Sweden</b>	122,50	1	132	0,02	148	130,76	57	0,05	125
25	<b>Switzerland</b>	44,83	60	42	0,83	23	399,13	29	0,17	76
150	<b>Syrian Arab Republic</b>	141,00	2	130	0,01	156	15,43	118	0,02	143
10	<b>Tajikistan</b>	33,50	30	63	0,47	41	311,27	34	2,93	11
110	<b>Tanzania</b>	101,33	30	65	0,09	95	17,53	115	0,06	119
54	<b>Thailand</b>	58,50	105	26	0,17	70	547,98	25	0,16	80
38	<b>The Bahamas</b>	49,00	1	135	0,38	48	211,39	45	3,32	9
81	<b>The Gambia</b>	79,83	4	108	0,29	56	4,93	143	0,27	58
152	<b>Togo</b>	143,17	1	135	0,02	148	1,08	156	0,03	136
52	<b>Tonga</b>	57,17	1	133	1,20	18	6,90	138	1,27	18
149	<b>Trinidad and Tobago</b>	137,50	1	147	0,05	121	2,36	150	0,02	143
133	<b>Tunisia</b>	116,17	6	97	0,06	113	23,08	108	0,04	133
97	<b>Turkey</b>	89,67	55	44	0,09	95	254,97	40	0,04	132
154	<b>Turkmenistan</b>	144,83	0	170	0,00	162	10,54	125	0,05	125
n/a	<b>Tuvalu</b>	n/a	0	170	n/a	n/a	n/a	n/a	n/a	n/a
109	<b>Uganda</b>	100,33	23	68	0,09	95	12,60	120	0,07	112
69	<b>Ukraine</b>	74,00	62	41	0,13	85	291,94	37	0,11	98
153	<b>United Arab Emirates</b>	144,50	0	155	0,01	156	17,58	114	0,02	143
58	<b>United Kingdom</b>	63,50	124	23	0,21	67	1434,84	14	0,09	105
34	<b>United States</b>	47,00	426	13	0,15	80	30237,58	1	0,31	54
84	<b>Uruguay</b>	82,00	6	97	0,17	70	40,88	87	0,14	84
139	<b>Uzbekistan</b>	121,00	14	74	0,05	121	10,84	124	0,02	143
129	<b>Vanuatu</b>	114,67	0	164	0,05	121	1,70	152	0,23	65
13	<b>Venezuela</b>	34,50	1516	5	6,34	2	375,09	30	0,14	84
5	<b>Viet Nam</b>	19,00	457	12	0,59	30	1861,50	10	1,31	16
138	<b>Zambia</b>	120,00	4	109	0,04	131	9,95	129	0,08	110
n/a	<b>Zimbabwe</b>	n/a	9	81	0,08	103	23,31	107	n/a	n/a

Table 6: Climate Risk Index 2009

Rank CRI 2009	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
15	Afghanistan	26,67	175	14	0,61	14	37,53	50	0,14	34
56	Algeria	56,00	39	29	0,11	41	6,20	65	0,00	80
77	Angola	63,50	24	41	0,14	38	0,72	104	0,00	80
42	Argentina	49,83	34	32	0,08	46	60,03	43	0,01	66
6	Australia	13,17	572	3	2,61	3	1522,54	10	0,18	30
16	Austria	28,17	21	45	0,25	24	643,14	20	0,20	28
114	Azerbaijan	89,17	0	94	0,00	94	0,99	93	0,00	80
8	Bangladesh	18,33	379	7	0,23	25	970,95	13	0,40	20
77	Barbados	63,50	0	94	0,00	94	23,68	57	0,39	21
79	Benin	66,00	7	73	0,07	50	1,06	91	0,01	66
10	Bhutan	20,33	12	59	1,78	8	83,17	41	2,36	3
59	Bolivia	56,67	0	94	0,00	94	314,10	28	0,69	15
122	Bosnia and Herzegovina	92,00	0	94	0,00	94	0,37	110	0,00	80
125	Botswana	93,50	0	94	0,00	94	0,11	119	0,00	80
26	Brazil	36,83	135	15	0,07	50	956,76	14	0,05	46
73	Brunei Darussalam	61,83	2	84	0,49	16	0,94	95	0,00	80
23	Burkina Faso	36,33	8	70	0,06	57	346,30	24	1,85	5
91	Burundi	72,17	0	94	0,00	94	3,66	69	0,11	41
7	Cambodia	16,50	52	22	0,37	18	345,10	25	1,22	8
96	Cameroon	76,50	11	60	0,06	57	0,04	125	0,00	80
46	Canada	54,00	9	67	0,03	76	866,92	15	0,07	45
48	Cape Verde	54,50	3	82	0,58	15	0,56	107	0,03	54
95	Central African Republic	76,33	0	94	0,00	94	1,66	84	0,05	46
104	Chad	81,67	0	94	0,00	94	2,34	76	0,01	66
118	Chile	90,50	2	84	0,01	88	0,09	123	0,00	80
23	China	36,33	551	4	0,04	75	14828,46	2	0,16	31
2	Chinese Taipei	6,67	544	5	2,35	4	6603,28	3	0,90	12
100	Colombia	78,83	6	77	0,01	88	10,61	60	0,00	80
111	Costa Rica	87,50	1	91	0,02	80	0,18	114	0,00	80
62	Cote d'Ivoire	58,00	38	30	0,18	30	0,87	98	0,00	80
126	Cyprus	94,00	0	94	0,00	94	0,10	122	0,00	80
20	Czech Republic	32,33	22	44	0,21	26	332,36	26	0,13	36
100	Democratic Republic of Congo	78,83	18	49	0,03	76	0,19	113	0,00	80
83	Dominican Republic	69,17	7	73	0,07	50	1,89	82	0,00	80
30	Ecuador	41,67	10	63	0,07	50	237,77	33	0,22	27
1	El Salvador	4,33	198	12	3,40	2	1827,00	8	4,27	1
11	Fiji	21,00	13	58	1,47	9	82,43	42	2,14	4
41	France	49,00	15	56	0,02	80	2791,41	6	0,13	36
121	Georgia	91,83	0	94	0,00	94	0,39	109	0,00	80
68	Germany	60,50	18	49	0,02	80	363,42	23	0,01	66
21	Ghana	35,33	40	27	0,17	33	47,08	47	0,13	36

Rank CRI 2009	Country	Overall CRI score	Death toll		Deaths per 100,000 inhabitants		Losses in mil- lion US\$ (PPP)		Losses in million USD per unit GDP (in %)	
			Total	Rank	Total	Rank	Total	Rank	Total	Rank
			42	Greece	49,83	10	63	0,09	44	101,13
57	Grenada	56,50	0	94	0,00	94	26,88	53	2,44	2
53	Guatemala	55,17	38	30	0,27	22	0,93	97	0,00	80
108	Guinea	84,00	0	94	0,00	94	1,15	90	0,01	66
97	Guyana	77,00	0	94	0,00	94	1,99	80	0,04	50
55	Haiti	55,83	17	52	0,17	33	1,46	85	0,01	66
65	Honduras	58,67	0	94	0,00	94	182,04	34	0,56	18
73	Hungary	61,83	10	63	0,10	42	7,17	64	0,00	80
13	India	23,83	2434	1	0,20	28	4107,43	4	0,11	41
29	Indonesia	41,33	238	10	0,10	42	162,61	36	0,02	59
102	Iran	79,50	9	67	0,01	88	2,61	74	0,00	80
123	Iraq	92,33	0	94	0,00	94	0,34	112	0,00	80
63	Ireland	58,33	0	94	0,00	94	442,78	22	0,26	23
53	Italy	55,17	45	24	0,08	46	25,86	55	0,00	80
76	Jamaica	62,67	0	94	0,00	94	56,39	44	0,24	25
40	Japan	48,00	63	19	0,05	67	825,42	17	0,02	59
116	Kazakhstan	90,17	0	94	0,00	94	0,84	99	0,00	80
39	Kenya	46,83	63	19	0,18	30	3,52	70	0,01	66
105	Korea, Republic	81,83	8	70	0,02	80	0,83	101	0,00	80
127	Kuwait	94,33	0	94	0,00	94	0,07	124	0,00	80
71	Kyrgyz Republic	61,67	16	55	0,30	19	0,13	117	0,00	80
12	Lao People's Democratic Re- public	23,00	17	52	0,27	22	258,07	30	1,79	6
66	Lebanon	59,00	11	60	0,29	20	0,96	94	0,00	80
99	Liberia	78,17	2	84	0,05	67	0,11	119	0,01	66
35	Madagascar	44,17	18	49	0,09	44	25,12	56	0,13	36
106	Malaysia	83,17	2	84	0,01	88	2,08	79	0,00	80
18	Mali	31,33	25	39	0,18	30	53,97	45	0,34	22
82	Mauritania	68,00	2	84	0,06	57	1,04	92	0,02	59
59	Mexico	56,67	28	38	0,03	76	242,32	32	0,02	59
103	Moldova	80,50	2	84	0,06	57	0,04	125	0,00	80
27	Mongolia	37,50	34	32	1,25	11	3,36	71	0,04	50
51	Morocco	55,00	42	26	0,13	39	6,13	66	0,00	80
50	Mozambique	54,83	25	39	0,12	40	2,21	78	0,01	66
92	Myanmar	73,17	30	37	0,05	67	0,54	108	0,00	80
31	Namibia	42,50	85	18	4,08	1	0,74	103	0,01	66
9	Nepal	18,83	198	12	0,71	13	162,06	37	0,48	19
108	Netherlands	84,00	0	94	0,00	94	8,28	62	0,00	80
80	New Zealand	66,50	1	91	0,02	80	46,36	48	0,04	50
57	Nicaragua	56,50	0	94	0,00	94	175,60	35	1,06	11
36	Niger	44,33	7	73	0,05	67	115,15	39	1,14	10
87	Nigeria	70,33	33	34	0,02	80	4,54	68	0,00	80
120	Norway	91,33	0	94	0,00	94	0,66	106	0,00	80
88	Oman	70,50	0	94	0,00	94	40,06	49	0,05	46
68	Pakistan	60,50	112	16	0,07	50	1,38	87	0,00	80
111	Panama	87,50	0	94	0,00	94	1,72	83	0,00	80
61	Papua New Gui-	57,83	11	60	0,17	33	1,30	89	0,01	66

Rank CRI 2009	Country	Overall CRI score	Death toll		Deaths per 100,000 inhabitants		Losses in mil- lion US\$ (PPP)		Losses in million USD per unit GDP (in %)	
			Total	Rank	Total	Rank	Total	Rank	Total	Rank
	nea									
45	Paraguay	51,33	1	91	0,02	80	243,81	31	0,85	13
51	Peru	55,00	49	23	0,17	33	1,92	81	0,00	80
3	Philippines	9,50	1231	2	1,33	10	2675,22	7	0,83	14
14	Poland	25,33	286	9	0,75	12	327,48	27	0,05	46
93	Portugal	73,33	5	79	0,05	67	5,30	67	0,00	80
84	Republic of Ye- men	69,50	14	57	0,06	57	1,43	86	0,00	80
44	Romania	50,33	44	25	0,20	28	8,80	61	0,00	80
75	Russia	62,00	9	67	0,01	88	553,66	21	0,03	54
94	Rwanda	74,50	8	70	0,08	46	0,04	125	0,00	80
5	Saudi Arabia	12,50	500	6	1,96	5	1467,93	11	0,25	24
46	Senegal	54,00	6	77	0,05	67	35,49	51	0,16	31
116	Serbia, Monte- negro, Kosovo	90,17	0	94	0,00	94	0,84	99	0,00	80
27	Sierra Leone	37,50	110	17	1,93	6	1,32	88	0,03	54
124	Singapore	92,83	0	94	0,00	94	0,14	115	0,00	80
25	Solomon Islands	36,33	10	63	1,93	6	2,31	77	0,15	33
49	South Africa	54,67	31	36	0,06	57	53,91	46	0,01	66
32	Spain	42,83	23	42	0,05	67	1813,05	9	0,13	36
107	Sri Lanka	83,50	5	79	0,02	80	0,80	102	0,00	80
63	St. Lucia	58,33	0	94	0,00	94	26,87	54	1,54	7
67	Sudan	59,83	20	48	0,05	67	17,02	59	0,02	59
128	Suriname	95,00	0	94	0,00	94	0,02	128	0,00	80
33	Switzerland	43,83	5	79	0,06	57	721,66	18	0,23	26
115	Syrian Arab Re- public	89,50	0	94	0,00	94	0,94	95	0,00	80
38	Tajikistan	46,33	21	45	0,28	21	2,74	73	0,02	59
90	Tanzania	71,83	23	42	0,06	57	0,14	115	0,00	80
34	Thailand	44,00	21	45	0,03	76	1062,82	12	0,20	28
111	The Gambia	87,50	0	94	0,00	94	0,36	111	0,01	66
110	Tonga	86,33	0	94	0,00	94	0,12	118	0,02	59
89	Trinidad and Tobago	71,33	0	94	0,00	94	19,88	58	0,08	44
81	Tunisia	67,50	17	52	0,16	37	0,11	119	0,00	80
22	Turkey	35,83	59	21	0,08	46	859,78	16	0,10	43
98	Uganda	77,33	2	84	0,01	88	3,21	72	0,01	66
71	Ukraine	61,67	32	35	0,07	50	2,49	75	0,00	80
85	United Arab Emi- rates	69,83	3	82	0,06	57	8,12	63	0,00	80
37	United Kingdom	44,83	40	27	0,06	57	647,78	19	0,03	54
17	United States	30,00	223	11	0,07	50	19198,31	1	0,14	34
18	Uruguay	31,33	7	73	0,21	26	279,37	29	0,64	17
86	Venezuela	70,00	0	94	0,00	94	128,44	38	0,04	50
4	Viet Nam	10,83	334	8	0,38	17	2943,05	5	1,15	9
119	Zambia	91,00	0	94	0,00	94	0,72	104	0,00	80
70	Zimbabwe	61,00	0	94	0,00	94	28,27	52	0,65	16

## 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.

Germanwatch is funded by membership fees, donations, grants from the "Stiftung Zukunftsfähigkeit" (Foundation for Sustainability), and by grants from a number of other public and private donors.

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