

WORKSHEETS ON CLIMATE CHANGE

Extreme events and climate change

Insurances for developing countries



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The first years of the 21st Century saw an unprecedented number of extreme weather events with significant numbers of casualties and damage:

- **2003:** The hot summer was one of the largest natural disasters in recent centuries in Europe. Statistical analyses have shown that a total of more than 70,000 people lost their lives prematurely.
- **2004:** For the first time in the history of Brazil, a tropical storm off the coast appeared in a region where so far no hurricane risk was assumed.
- **2005:** Experienced the worst hurricane season ever since the start of weather recording (28 tropical storms). For the first time the alphabet for naming tropical storms was exhausted meaning that Greek letters had to be used. Of all tropical storms Hurricane Katrina was the most expensive one to date as far as the economic damage is concerned, while Hurricane Wilma was the strongest one from a meteorological point of view. Another novelty: The tropical storm Vince system developed off Madeira and moved towards the Iberian Peninsula. It was the first tropical storm in the Mediterranean.
- **2007:** Cyclone Gamede produced the most violent rains that have been observed so far: 3,929 mm in 72 hours on the tropical island of La Reunion. In comparison, approximately 820 mm of precipitation fall in Cologne in an entire year.
- **2008:** Cyclone Nargis hit Burma causing a death toll of more than 138,000.
- **2011:** A devastating drought in East Africa plunged over 10 million people into a severe hunger crisis.
- **2012:** Hurricane Sandy hit the East Coast of the USA and the Caribbean. The damage amounted to about US\$ 20 billion, more than 50 people lost their lives.
- **2013:** According to measurements, typhoon Haiyan is the strongest storm ever to have made landfall. It devastated large parts of the Philippines and left 4.1 million people without a home.

For a long time, it was not possible to prove that a single climate event was directly linked to anthropogenic climate change. However, there is now strong scientific evidence with respect to some extreme events such as heat waves and heavy precipitation¹. Other unique climate events cannot be clearly attributed to climate change, but the number of weather-related natural disasters has increased dramatically in recent years. This is consistent with the trend projected and observed by the scientific community, stating that the frequency (frequency of occurrence) or intensity (strength) of some extreme climatic events will continue to increase. One factor is climate change and the generally increased level of energy in the climate system due to the increased greenhouse effect.

Many people are not aware of what kind of consequences they might have to face at regional level due to the significant increase in the global mean temperature. If climate protection is not driven forward with absolute priority, by the end of the century temperature increases of up to 4 to 6 °C could occur on a global scale. This might not sound all that dramatic at first if we add this increase to the present day temperatures in Germany. Underestimated, however, is the fact that in addition to other drastic consequences the probability of extreme weather events will also increase significantly.

The impacts of extreme events are unevenly distributed around the world. Although risks – be it flood, storm or drought risks – are different at local level, it is not so much the spatial distribution that causes this injustice. The extent of the impact that extreme events have on people and societies often depends crucially on the level of development and the resources available at local level. The fact that poorer countries would be hit particularly hard in the event of an expected increase and intensification in extreme events caused by climate change is an obvious injustice, since they have contributed the least to global warming.

International climate policy must pursue the objective of averting dangerous climate change. This is why the annual climate conferences of the United Nations repeatedly fight for the continued existence of the Kyoto Protocol or a post-Kyoto treaty. The Kyoto Protocol was a first step towards reducing emissions in industrialised countries. After expiry of the first phase, the time scale for fulfilling the obligations outlined in the Protocol was extended to the year 2020. Climate negotiations have revealed that in addition to a drastic reduction of greenhouse gas emissions it is becoming increasingly important to find solutions to adapt to the impacts of the climate change that have already happened and are no longer avoidable. The potential for developing countries to protect themselves against extreme events is discussed within this context.

One approach being discussed is the introduction of certain forms of climate insurance. Extreme damage in developing countries would be partially covered by an international climate insurance policy, with the premiums being paid by industrialised countries. In addition, the plan is to increase the degree of private insurance coverage in developing countries. This can be done, for example, by investing in weather stations so that insurers are able to calculate the probability of possible losses and thus be in the position to offer insurance in the first place.

Even if an insurance system is in principle a good approach to distribute risks across space and time, thus helping to mitigate the effects of extreme events, it is just as important to encourage more investment in risk prevention at the same time. Risk mitigation measures, for example, might include the establishment of early warning systems, the creation of flood protection systems and the planting of coastal mangroves.

¹ Coumou, D. and S. Rahmstorf (2012): A decade of weather extremes. In: Nature climate change, 25 March 2012. http://www.pik-potsdam.de/~stefan/Publications/Nature/Coumou_Rahmstorf_NCC2012.pdf, accessed 29 Jan. 2014.

Use in the classroom

These teaching materials provide school pupils with the chance to work independently through the thematic complex surrounding climate change and weather-related climatic events. While doing so, they learn to reflect on these issues taking into consideration general socio-economic conditions and to identify the consequences, especially for the poorer regions of the Earth.

An introduction to the subject a diagram is provided with an outline of the trend in global average temperatures in the 20th century (**M 1**). This can be followed by a first discussion about the potential impacts of the temperature increases that have been observed.

After that, **M 2** presents the theoretical impact mechanism, which explains how the change in mean values affects the distribution of extreme events. The objective of materials **M 3** and **M 4** is to demonstrate to school pupils how extreme events are increasing in number and why the damage they cause has also increased. After the pupils are able to identify a global trend of this kind using the observed data, they will look at the example of tropical storms to highlight what factors cause climate change increases the risk of damage from natural catastrophes (**M 5–M 8**).

In the continued course of the teaching unit, the pupils discuss the financial consequences of extreme weather events on developing countries and industrialised states (**M 9–M 11**). They discuss the possible options for action available for adapting to the situation and, using the example of private donations in cases of natural catastrophes, identify the potential consequences of climate change for established methods in catastrophe aid (**M 12**).

Following that, the pupils look at the example of climate insurance as a way of dealing with weather-related catastrophes and in the process become familiar with new methods being discussed (**M 13** and **M 14**, **M 16** and **M 17**).

Towards the end of the teaching unit, the pupils can discuss what a comprehensive plan of action might look like (**M 15–M 17**). This includes to a great extent containing and reducing greenhouse gas emissions, which are a driver of climate change and which are responsible for causing the increased number of extreme weather events.

Further reading:

IPCC (2012): Summary for Policymakers. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.). A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 1-19.

Kreft, S. and D. Eckstein (2013): Global Climate Risk Index 2014: Who suffers most from extreme weather events? Weather-related loss events in 2012 and 1993 to 2012. <http://germanwatch.org/de/download/8551.pdf> (Accessed 29.01.2014).

Munich Climate Insurance Initiative (MCII): www.climate-insurance.org (Accessed 27.01.2014).

Ward, B. (2013): Extreme weather and climate change: is there a link?. In: The Guardian. <http://www.theguardian.com/environment/2013/aug/23/climate-change-carbon-emissions-ipcc-extreme-weather> (Accessed 18.02.2014).

Warner, K. et al. (2012): Insurance solutions in the context of climate change-related loss and damage: Needs, gaps, and roles of the Convention in addressing loss and damage. Munich Climate Insurance Initiative (MCII) submission to the SBI Work Programme on Loss and Damage, October 2012. Policy Brief No. 6. United Nations University Institute for Environment and Human Security (UNU-EHS), Bonn. <https://www.ehs.unu.edu/article/read/insurance-solutions-in-the-context-of-climate-change-related> (Accessed 14.02.2014).

Germanwatch

Following the motto “Observing, Analysing, Acting”, Germanwatch has been actively promoting global equity and the preservation of livelihoods since 1991. In doing so, we focus on the politics and economics of the North and 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 attempt to approach our goals by advocating for the prevention of dangerous climate change, food security, and compliance of companies with human rights.

Germanwatch is funded by membership fees, donations, grants from the “Stiftung Zukunftsfähigkeit” (Foundation for Sustainability) as well as grants from various other public and private donors.

You can also help achieve the goals of Germanwatch by becoming a member or by donating to:

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The publisher is responsible for the content of this publication.

Within the series of *Worksheets on Climate Change* the following publications are available in English:

- Global climate change – General issues
- The melting glaciers – Glacial lake outburst floods in Nepal and Switzerland
- Sea level rise – Consequences for coastal and lowland areas: Bangladesh and the Netherlands
- Going under! The threat of rising sea levels for the small island nation of Tuvalu
- The threat to tropical rainforests and international climate protection
- Climate change and food security – Trends and key challenges
- Extreme events and climate change – Insurances for developing countries

See: www.germanwatch.org/en/worksheets

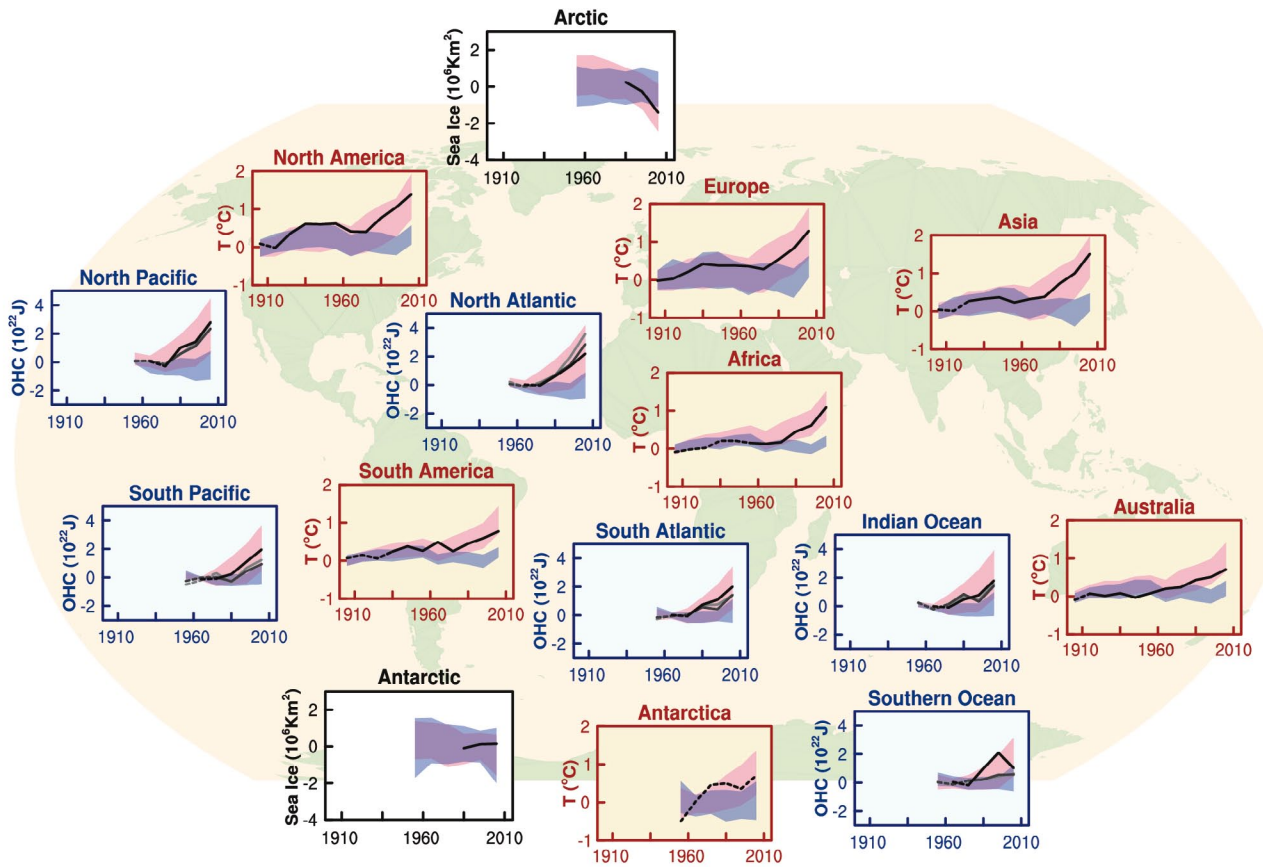
All worksheets are also available in German.



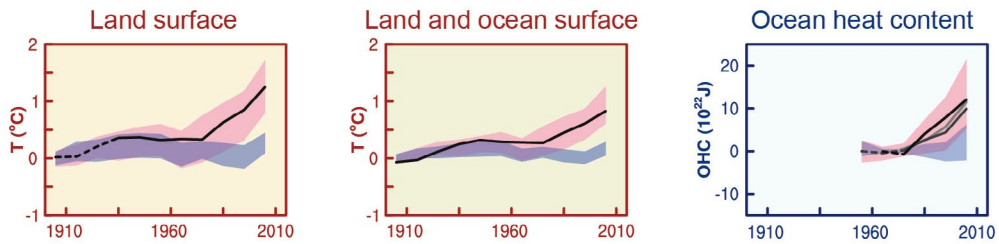
Observing. Analysing. Acting.
For Global Equity and the Preservation of Livelihoods.

M 1

Global and continental temperature changes



Global averages



≡ Observations

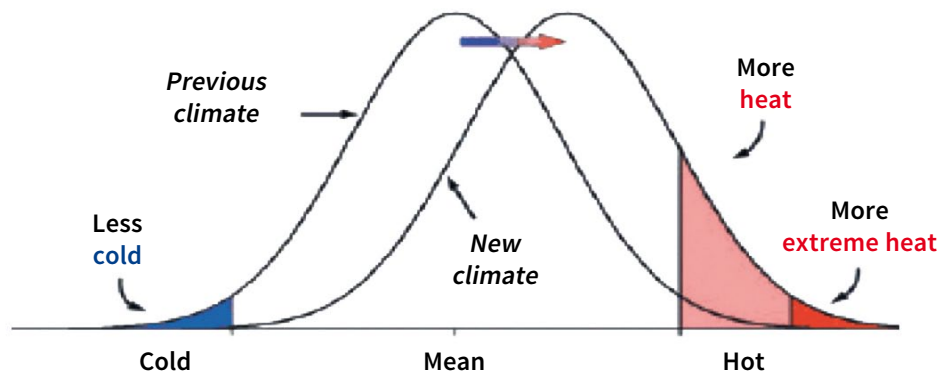
■ Models using only natural forcings

■ Models using both natural and anthropogenic forcings

(Source: IPCC (2013): Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, p. 16. <http://www.climate2013.org/spm>, accessed 24.01.2014)

M 2

How the mean temperature change influences extreme weather events



(Source: Hupfer, Börngen (2004): Gibt es „Klimakatastrophen“? In: Naturwissenschaftliche Rundschau, 57, pp. 233-240)



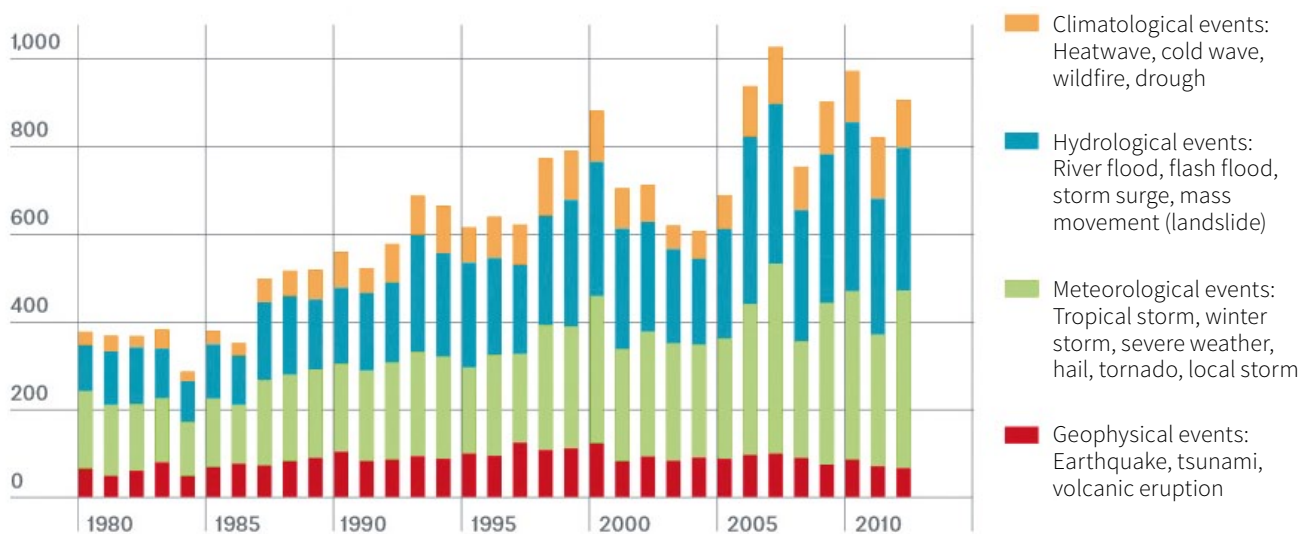
EXERCISES

1. M 1 shows the global and regional developments in temperature on Earth and the spectrum of temperatures calculated in different climate simulations. What knowledge can be gained from this graphic?
2. Discuss what the consequences developments in temperature might have on human beings and the environment.
3. M 2 shows the frequency distribution of extreme temperatures. The same can also be seen in connection with other weather-related extreme events. Explain why the increase in temperature might result in a considerable increase in extreme weather.

M 3

How the mean temperature change influences extreme weather events

Number of natural catastrophes 1980–2012



(Source: MunichRe (2013): The year in figures. In: Topics Geo. Natural catastrophes 2012. Analysis, assessments, positions, Issue 2013, p. 52. http://www.munichre-america.com/site/mram/get/documents_E200191439/mram/assetpool.mr_america/PDFs/3_Publications/Topics_Geo_2012_us.pdf, accessed 27.01.2014)

M 4**Damage caused by extreme weather**

The amount of damage that an extreme weather event causes depends on how greatly people and ecosystems are exposed to these and whether they are vulnerable to this extreme event. The more that people and nature are exposed to the dangers and the fewer possibilities they have to protect themselves and cope with the event, the worse the damage will be. One good example of this are tropical storms that occur offshore.

When storms happen on the open sea, the damage is generally not that severe and only limited to a few ships. And many ships can already get out of the way of danger beforehand thanks to early warning systems. However, when cyclones occur onshore, exposure is much higher and this means that the damage caused is also correspondingly higher. Vulnerability and exposure are affected by factors like resilience and location, which play an important role. For example, simply constructed houses in low-down positions are less resilient and are therefore more vulnerable to tropical storms than houses with a solid construction built higher up.

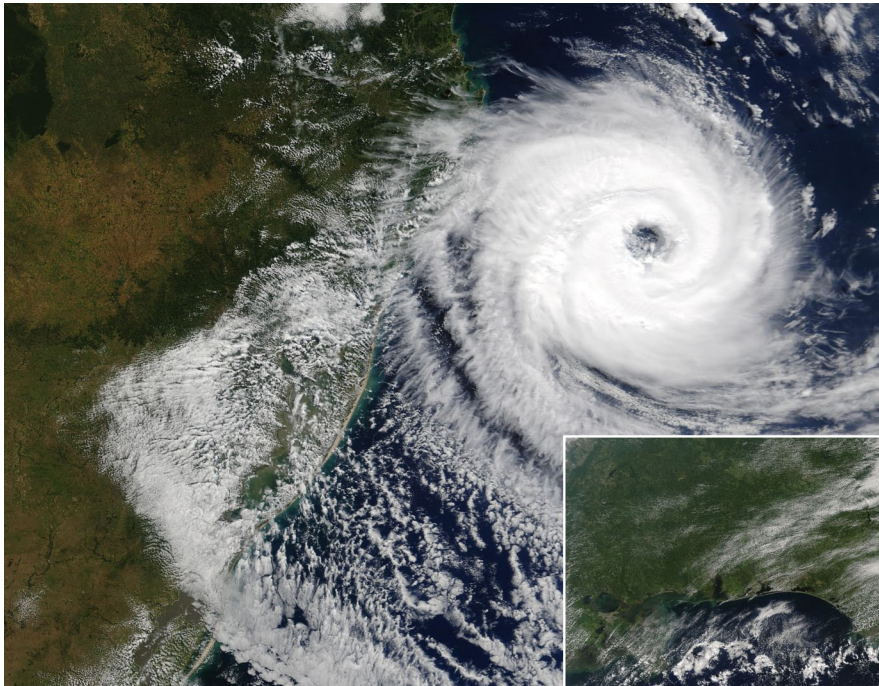
The degree to which people are exposed to extreme weather events is increasing. Population growth, particularly in emerging and developing countries is leading people to settle more often in areas that are threatened by extreme weather events. This trend is true in particular of coastal regions, which are seeing a considerable rise in the number of people settling there. And yet it is these regions that are most at risk from storm surges and tropical cyclones. This means that there are fewer and fewer surface areas along rivers where flood waters can spread out when necessary. The result is a higher risk of rising water levels and flooding. In addition, many people in developing countries live in slums that have very few protective facilities like dams or effective warning systems. What is more, poverty-stricken slum residents are hardly in a position to cope with the financial consequences of extreme events. Even in industrialised countries, the construction of embankments along rivers, deforestation removing woodlands that offer a certain protection against storms, and the dependence on sensitive infrastructural facilities have increased the risk of events causing damage.


EXERCISES

4. Describe the trend in the number of natural catastrophes in **M 3**. How can differences between the different categories be explained?
5. Discuss what factors are responsible for the increase in damage caused by extreme weather events.
(**M 3 and M 4**)

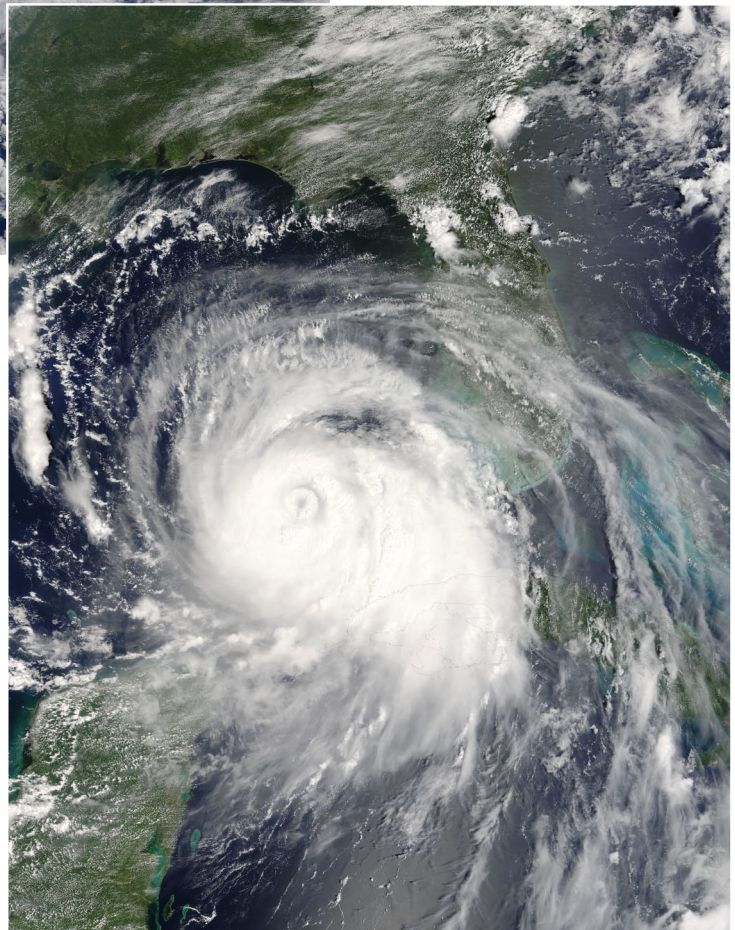
M 5

Tropical storms



a) Hurricane Catarina, 2004
off the coast of Brazil

(Source: NASA/ MODIS)



b) Hurricane Katrina (2005)
in the Gulf of Mexico

(Source: NASA: http://www.nasa.gov/images/content/126285main_Katrina_082705_lg.jpg,
accessed 27.01.2014)

M 6

Tropical storms, different terms

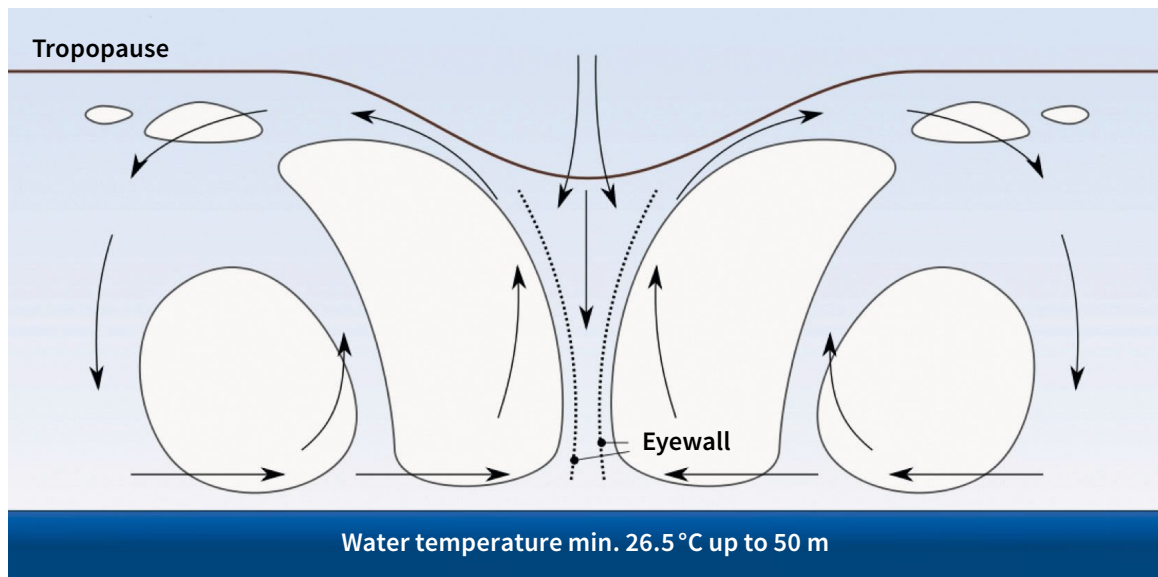
Atlantic & East Pacific: **Hurricane**

Indian Ocean: **Cyclone**

West Pacific: **Typhoon**

M 7

Tropical storm formation

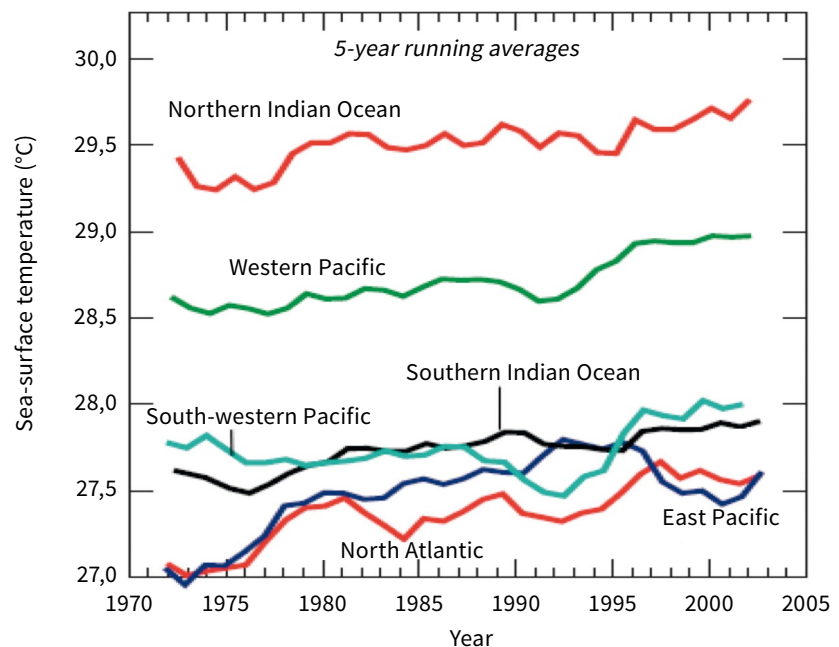


(Source: altered, from NASA Earthobservatory. http://earthobservatory.nasa.gov/Features/Hurricanes/Images/hurricane_section.gif, accessed 14.02.2014)

M 8

Water temperatures of the world's oceans

Summer sea-surface temperature by ocean basin



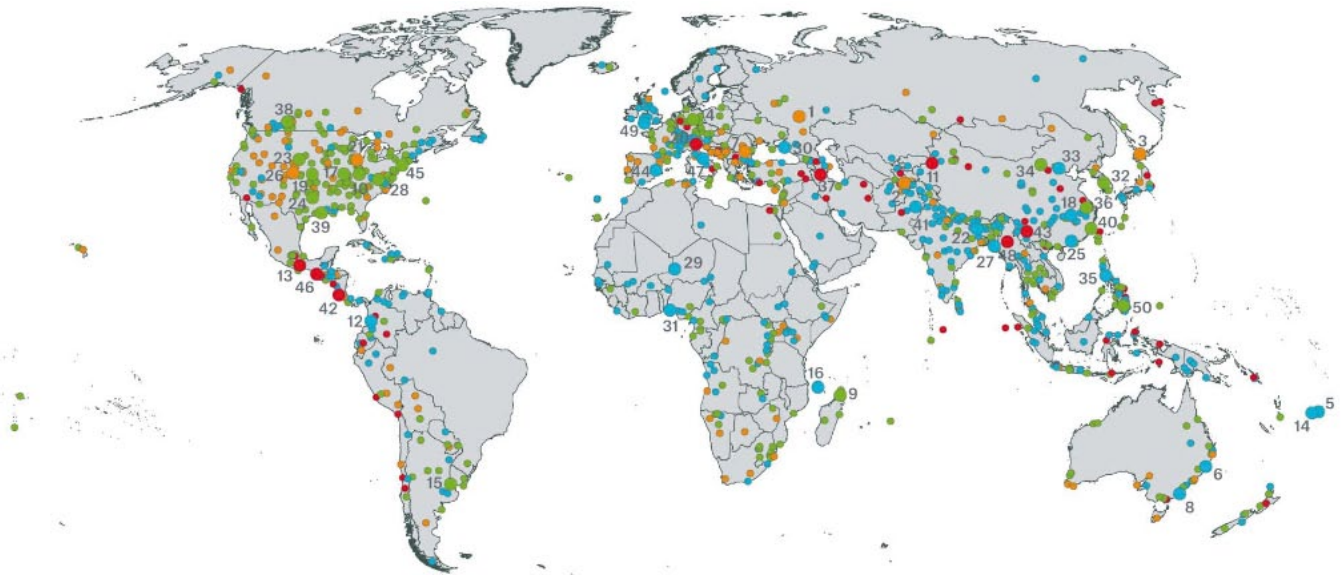
(Source: extrapolated from Webster, P. et al. (2005): Changes in tropical cyclone number, duration, and intensity in a warming environment, Science 309(5742), pp.1844-1846.)

EXERCISES

- What differences can you identify between cyclone Catarina and Hurricane Katrina (M 5a and M 5b)? What is specific to each storm? Research the Internet to find answers to this exercise.
- Use the graphic M 7 to explain how a tropical storm comes about. What factors in climate change might influence the development/consequences of a tropical storm? Use M 8.

M 9a

Occurrence of natural catastrophes worldwide in 2012



905 natural hazard events, thereof

○ 50 major events (selection)

● Geophysical events: Earthquake, tsunami, volcanic eruption

● Meteorological events: Tropical storm, winter storm, severe weather, hail, tornado, local storm

● Hydrological events: River flood, flash flood, storm surge, mass movement (landslide)

● Climatological events: Heatwave, cold wave, wildfire, drought

(Source: MunichRe (2013): The year in figures. In: Topics Geo. Natural catastrophes 2012. Analysis, assessments, positions, Issue 2013, p 62.
http://www.munichre.com/site/mram/get/documents_E200191439/mram/assetpool.mr_america/PDFs/3_Publications/Topics_Geo_2012_us.pdf,
 accessed 27.01.2014)

M 9b Main countries affected by extreme weather events

Germanwatch's global climate risk index (CRI) shows to what extent countries are affected by floods, storms, heat waves, etc. The index looks at the impacts of extreme weather events on humans (death toll) and at the direct

economic losses. The table shows the eleven most affected countries as well as a comparison with Germany, Austria and Switzerland and includes extreme weather events in the period from 1993 to 2012.

CRI 1993–2012 (1992–2011)	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 1993–2012)
1 (1)	Honduras	10.17	329.80	4.86	667.26	2.62	65
2 (2)	Myanmar	11.83	7135.90	13.51	617.79	1.20	38
3 (5)	Haiti	16.83	307.50	3.45	212.01	1.73	60
4 (3)	Nicaragua	17.17	160.45	2.81	224.61	1.74	44
5 (4)	Bangladesh	19.67	816.35	0.56	1832.70	1.16	242
6 (6)	Vietnam	24.00	419.70	0.52	1637.50	0.91	213
7 (14)	Philippines	31.17	643.35	0.79	736.31	0.29	311
8 (10)	Dominican Republic	31.33	212.00	2.43	182.01	0.32	54
8 (12)	Mongolia	31.33	12.85	0.52	327.38	3.68	25
10 (9)	Thailand	31.50	160.35	0.26	5410.06	1.29	193
10 (11)	Guatemala	31.50	82.35	0.69	312.23	0.58	72
32 (37)	Germany	48.00	476.3	0.58	2264	0.10	492
33 (36)	Switzerland	48.50	56.15	0.76	389	0.15	282
56 (57)	Austria	61.83	26.90	0.33	383	0.15	179

(Source: Kreft, S. and D. Eckstein (2013): Global Climate Risk Index 2014. Germanwatch, Bonn, p. 6. <http://germanwatch.org/de/download/8551.pdf>, accessed 27.01.2014).

M 10

Hurricane Katrina: The most expensive catastrophe of all time?

The US government has spent 118 billion dollars to date fixing the catastrophic damage caused by Hurricane Katrina. Katrina was not only the most expensive hurricane, but also the most deadly. The money was used, among other things, for repairing infrastructure, clearing rubble, helping the accommodation situation, insurance cover as well

as tax relief. Hurricane Katrina landed with full force on the Gulf Coast of the USA on the 29th of August last year (2005) and continued on its path through the states of Louisiana, Mississippi and Alabama, leaving a trail of devastation in its wake. It is seen as the greatest natural catastrophe in the history of the United States.

(Source: excerpts from 20 Minuten from 25.08.06)

M 11

Monetary damage in relation to economic performance

Country	Tropical storm	Absolute damage (in million USD)	Damage in% of GDP
Grenada	Ivan (2004)	889	200%
Cayman Islands	Ivan (2004)	3,500	183%
Burma	Nargis (2008)	10,000	75%
USA	Katrina (2005)	125,000	1%
USA	Sandy (2012)	75,000	0.5%
Philippines	Haiyan (2013)	14,000	5.6%

(Source: own compilation)


EXERCISES

- M 9a** illustrates the incidence of natural phenomena worldwide. Discuss the statement: "Although there is not a trend towards more weather-related natural phenomena in poorer countries compared to industrialised countries, the former are especially impacted by the increase in natural catastrophes" (**M 9a, 9b and M 11**).
- Discuss the statements arrived at in **M 10** maintaining that Hurricane Katrina was the most expensive tropical storm of all time (**M 10 and M 11**).
- With the help of the Internet, research into what types of extreme weather events occur in Germany or another industrialised country and in a developing country of your choice. Discuss strategies implemented in the industrialised country to adapt to this situation. Why can these not simply be implemented in the same way in another country and what strategies could be used instead in the developing country you have chosen?

M 12

Should we rely on donations?

“ Why the Germans donate so much

Berlin – The tsunami in South-East Asia has brought about an unprecedented willingness to donate. The Germans have donated more than 330 million euros in total in addition to the 500 million euros promised by the German government. The USA have promised a sum of 268 million euros. In addition, the Americans have sent the aircraft carrier “Abraham Lincoln” to Indonesia, as well as 90 helicopters, 19 ships and more than 14,000 soldiers are assisting the survivors.

Eberhard Sandschneider, director of research at the German Council on Foreign Relations, believes that the “unbelievable magnitude of the catastrophe” is the main motivation for donating money. While the 1976 earth-

quake in the Chinese region of Tangshan with 240,000 people killed had a higher death toll than the tsunami, there were no journalists back then reporting on the earthquake. Furthermore, the tsunami hit a region which many people know from their holidays spent there. Lutz Erbring, professor for communication studies at the Free University Berlin, pointed out that tourists who survived reported the terrible things they had experienced to the media upon their return. “What is more, it happened over Christmas, a time when people are more willing to donate.” The reason why victims of the insidious catastrophes in Africa only receive a fraction of the sums pledged to the tsunami victims has to do with the greater potential of sudden events to mobilise people.”

(Source: Berliner Morgenpost from 11.01.2005: Warum die Deutschen so viel Spenden, <http://www.morgenpost.de/printarchiv/politik/article336781/Warum-die-Deutschen-so-viel-spenden.html>, accessed 27.01.2014)

“ Don't we care about Burma?

- In comparison to the tsunami catastrophe, the willingness of Germans to donate money for the victims in Burma is low. Why?
- Employees of the aid organisation Technisches Hilfswerk loaded around 30 tonnes of humanitarian cargo for Burma onto a transport plane at Frankfurt Airport.
- Christiane Löll remembers how a surge of willingness to help followed the tsunami. It was just after Christmas four years ago when the first pictures of the tsunami catastrophe were broadcast on German television and donations started pouring into the account of Doctors without Borders, one every few minutes. A sum of 39 million euros in total amassed, so much money that

the organisation soon had to call on people to only transfer non-earmarked sums.

- The cyclone over Burma has now caused a catastrophe that is no less severe and Löll, spokesperson for Doctors without Borders says: “Considering what is happening there at the moment, the amount donated is far lower.” The organisation with its headquarters in Geneva has received around 100,000 euros from Germany to date. And German aid organisations have collected only a few hundred thousand euros. Aktion Deutschland Hilft (ADH), for example, reports donations of 250,000 euros so far. And the alliance “Entwicklung Hilft”, to which Brot für die Welt, Deutsche Welthungerhilfe, medico international, Misereor and terre des hommes belong, received only 400,000 euros, a lot less than expected.”

(Source: Die Zeit from 15.05.2008: Lässt Birma uns kalt? <http://www.zeit.de/online/2008/21/birma-hilfe/seite-1>, accessed 27.01.2014)



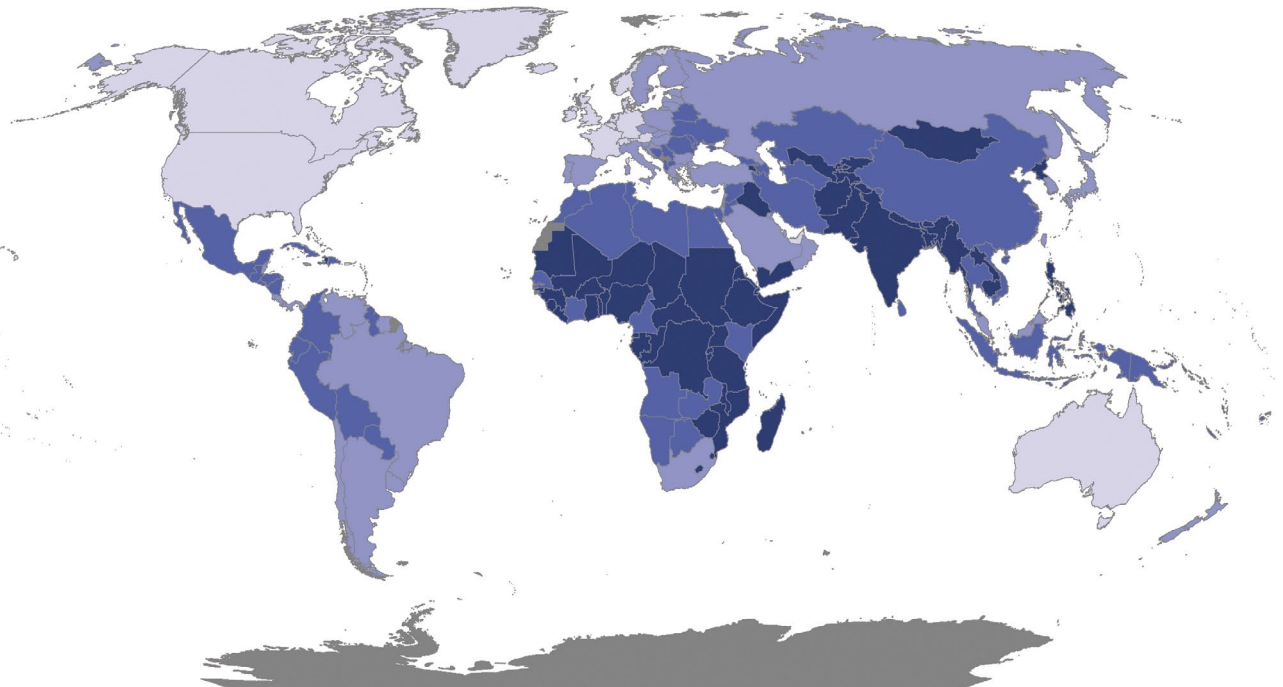
11. Why were the Germans so willing to donate when the tsunami happened in South-East Asia in 2005? Explain why this was not the case in 2008 when the cyclone Nargis caused the deaths of around 138,000 people in Burma (M 12).
12. Discuss in what ways the tendency to donate might develop in the future if there are more frequent extreme events due to climate change.

M 13 The insurance principle

Insurance refers to the basic principle of collective assumption of risk (insurance principle): a great number pay a sum of money (=insurance premium) into a collective pot of money kept by insurers so that, when an insured event occurs, compensation for damage can be paid out of this amount. As the insured event will only affect

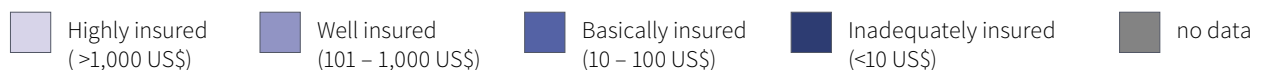
a few of those insured, the collective money pot should be enough to cover the amount to be paid. Prerequisite for this is the fact that the scope of damage is statistically assessable and, accordingly, the amount to be paid by each member of the collective can be determined using actuarial methods.

M 14 Insurance density: Industrialised versus developing countries



Insurance penetration per country and capita

Classification by property insurance premium (non-life including health)



(Source: Warner, K. et al. (2012): Insurance solutions in the context of climate change-related loss and damage: Needs, gaps, and roles of the Convention in addressing loss and damage. Munich Climate Insurance Initiative (MCII) submission to the SBI Work Programme on Loss and Damage, October 2012. Policy Brief No. 6. United Nations University Institute for Environment and Human Security (UNU-EHS), Bonn, p. 28, based on Munich Re (2012): Geo Risks Research, NatCatSERVICE. Munich)



13. Discuss the reasons why people in developing countries have less insurance coverage (M 13 and M 14).

M 15 International climate policy

The aim of climate policy is to reduce and/or hinder the extent and impact of climate change. It is part of environmental and economic policy and it is vital that it is implemented worldwide if it is to be successful. That is why international cooperation is necessary in the area of climate policy more than in any other political field.

As part of the United Nations Framework Convention on Climate Change (UNFCCC), 195 treaty states meet up every year in order to negotiate international agreements to mitigate climate change and talk about how to adapt to its consequences. The Kyoto Protocol, which was ratified in 1997 and which came into force in 2005, was a first step and it prescribed an obligatory reduction in greenhouse gas emissions for industrialised nations between 2008 and 2012 of 5.2% on average in comparison to the 1990 level.

As the first commitment period of the Kyoto Protocol ended in 2012, the states negotiated a successor treaty at the Climate Summit in Doha in December of that year. This Doha Climate Gateway constitutes a continuation of the Kyoto Protocol and applies for the treaty countries until the end of 2020. However, not all of the states that originally joined the Kyoto Protocol are taking part in this second commitment period, and several of them have declared their withdrawal from the process. For 2014, a mechanism for increasing the goals to be achieved was agreed, although this follow-up to the Kyoto Protocol is rather meagre and insufficiently ambitious.

In order to help the developing and emerging countries to achieve their climate protection goals, concrete financial pledg-

es were already given by industrialised nations at the 2009 Climate Summit in Copenhagen. This so-called “fast-start finance” included climate funds to the amount of 30 billion US dollars in the period between 2010 and 2012. To also secure the long-term finance of climate protection and adaptation measures, it was decided one year later in Cancun, Mexico, that the industrialised countries would provide 100 billion US dollars annually from 2020 onwards for climate finance. At the present time there is no binding obligation for the industrialised states, which has to do among other things with the fact that, at the Climate Summit in the Polish capital Warsaw in November 2013, the opportunity to close this gap was passed up. Nevertheless, it was agreed that the states should draw up strategies and approaches before the climate negotiations in Paris in 2015 showing how they intend to achieve the goal of providing annual funds of 100 billion dollars.

Further, the subject of “loss and damage” is gaining increasing attention in the public arena. “Loss and damage” refers to the losses and damage caused by climate change, above all the damage that can no longer be avoided by adapting or through climate protection. In particular the small island states, which are seriously threatened by the rising sea level, and the poorest developing countries have driven forward negotiations to come up with an international mechanism. Such a mechanism was passed at the Climate Summit in Warsaw. It is to be expanded upon in upcoming climate negotiations, so that climate-change-related loss and damage can be dealt with in the best possible way.

(Source: Kreft, S. et al., Germanwatch (2013): Schwaches Ergebnis trotz Verlängerung beim Klimagipfel im Warschauer Stadion. Germanwatch, Bonn, p. 25f. <http://germanwatch.org/7735>, accessed 27.01.2014)

M 16 Insuring the poorest against climate risks

Several years ago Germanwatch and the insurance company Munich Re began organising workshops on the subject of “Climate change - insuring the uninsurable” to take place at least once a year. The main questions were: “How can the people most affected by climate change be insured?” and “How can this be achieved if people cannot afford private insurance protection?” Peter Höpfe, who was initially head of the Georisk department at Munich Re at the beginning of 2005, convinced experts from Munich Re, World Bank, Germanwatch, the UN Climate Secretariat as well as academics from various institutes to join forces and form the “Munich Climate Insurance Initiative” in 2007. “The industrialised nations must contribute towards making sure that loss and damage in developing countries can be insured against”, he declared as its goal.

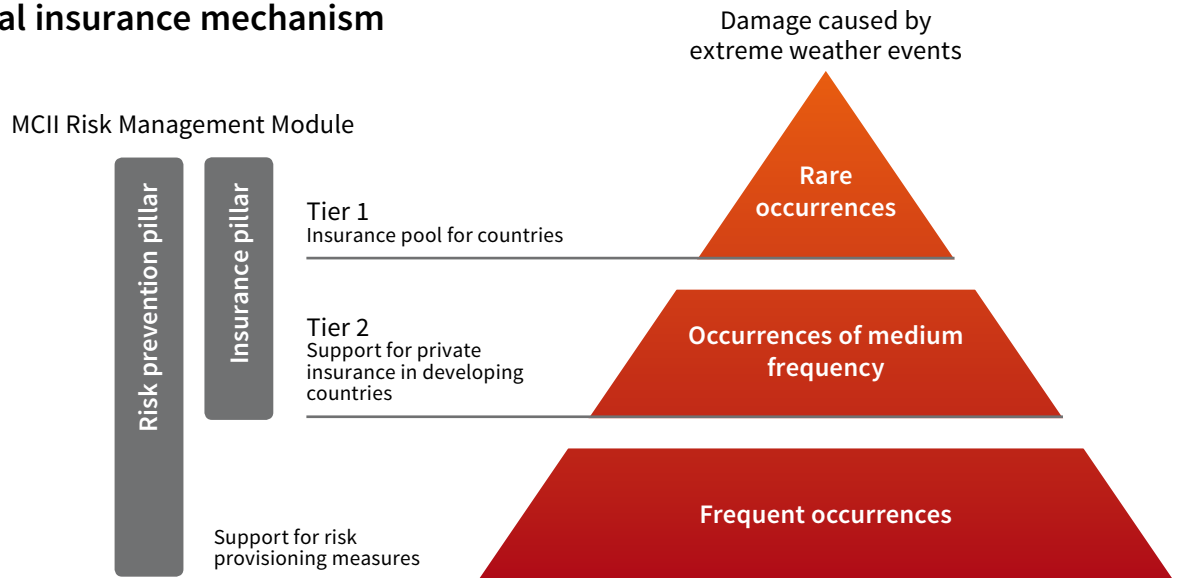
However, how can we solve the problem that those who are already poor anyway, and who are increasingly affected by natural catastrophes, will become even poorer and naturally do not have the money to pay for insurance like the rich do? Take the example of Africa. Development aid organisations are currently working there to develop a microinsurance for small-scale farmers that pays them something when no rain has fallen for a certain number of days. In this way, the farmers can prepare themselves for a possible catastrophe, for example, by buying food or new seeds at regional markets. “The most interesting aspect of this insurance is the fact that we will no longer have to beg for aid following a catastrophe”, said a participant from Africa during the event.

(Source: updated according to Bals, C. et al. (2008): Die Welt am Scheideweg: Wie retten wir das Klima? Rowohlt Verlag.)

M 17

The proposal of the Munich Climate Insurance Initiative (MCII)

A global insurance mechanism



(Source: own illustration)

Proposal for Insurance and Adaptation

“MCII made a presentation to the climate negotiators for a risk management module with two pillars (prevention and insurance) to promote adaptation to climate change. The **Prevention Pillar** puts reduction of human and economic losses as its top priority. It will define a process and incentives to reduce vulnerability and risk, and enhance adaptive capacity. The **Insurance Pillar** has two tiers. The first tier is a Climate Insurance Pool that would absorb a pre-defined proportion of high-level risks of disaster losses in vulnerable (developing) countries and be primarily paid for by developed countries through adaptation fund channels. MCII estimates that

3.2 to 5 billion dollars are needed annually to pay the premiums for this global pool.

The second tier, a Climate Insurance Assistance Facility, would enable public-private insurance systems that provide cover for the middle layers of risk in these countries. Tier 2 encourages greater participation of the private sector, and links to regional centres for capacity building. It would cost about 3 billion. The total estimated cost of MCII’s proposal – prevention and insurance tools – would be about 10 billion dollars per year.”

(Source: Press release from MCII on 8.12.2008. http://www.munichre.com/en/media_relations/press_releases/2008/2008_12_08_press_release.aspx, accessed 27.01.2014)

EXERCISES

- Discuss the statement: “Developing countries have a right to be supported by the industrialised states” (M 15).
- Explain in your own words the way the MCII insurance proposal works (M 16 and M 17). What advantages result from insuring against climate change? How would current developments proceed without such insurance solutions (M 13–M 15)? Take into consideration the previous points.
- Give reasons why an insurance solution cannot succeed without precautionary measures like dyke construction or mangrove cultivation.