

**Munich Re  
Foundation**  
From Knowledge  
to Action

2012 report





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3 February  
Dialogue forum  
"Aspiration and reality  
of power structures"  
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16 February  
Dialogue forum "Raw  
materials and energy –  
Is the world being  
redistributed?"  
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3 March  
Dialogue forum "Facebook,  
Twitter & Co. – The power  
of the (new) media"  
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poor – A microinsurance  
compendium, Volume II"  
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11–13 April  
Research Conference  
on Microinsurance,  
Enschede, Netherlands  
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17 April  
Dialogue forum "Changing  
economies – Do we  
need economic growth?"  
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15 May  
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lifestyles – Perspectives for  
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22–23 May  
Microinsurance Learning  
Session, Accra, Ghana  
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# June

5 June  
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Change, Justice and  
Sustainability – Linking  
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Policy", Springer Verlag  
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June  
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collecting drinking  
water from the fog nets  
in Morocco is completed  
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# July



1–7 July  
7th Summer Academy  
discussing "From social  
vulnerability to resilience –  
Measuring progress toward  
disaster risk reduction"  
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Oct

Nov  
Dec

Aug  
Sep



8–10 October  
UNU-EHS Keystone  
Conference “From social  
vulnerability to resilience  
in the context of climate  
adaptation”, Bonn  
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25–28 October  
Climate Change Adaptation  
Meeting, Maputo,  
Mozambique  
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6–8 November  
8th International Micro-  
insurance Conference  
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26 November – 7 December  
Speech about the “Loss  
and damage” programme  
at the World Climate Summit  
COP 18 in Doha, Qatar  
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7 December  
Research workshop on  
microinsurance, Mannheim  
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26 August  
Presentation of the  
RISK Award to a project  
in Beira, Mozambique,  
IDRC Davos  
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## Dear Readers,

In 2012, the eighth year of our foundation activities, we successfully concluded numerous projects. One such project, the Chair at the UN University of Bonn, established on 1 July 2005, finished its work in autumn as scheduled. It gave more than 150 young researchers from all over the world the opportunity to continue their education in the field of social vulnerability and bring their newly acquired knowledge to bear in their own countries (page 6). The final conference in Bonn provided an ideal forum for developing ideas for a policy paper that was presented at the World Climate Summit in Doha. The issue of widespread failure to factor social vulnerability into loss assessments echoed throughout the conference (page 10). During our last Summer Academy in July, it also became evident that an understanding of the diverse facets of social vulnerability is decisive for building the resilience of societies (page 8).

The multidisciplinary "Climate change and justice" project launched in 2007 has now also been brought to a close. The most important findings have been scientifically referenced in a book (page 26). Further projects that have been successfully completed are the flood warning system in Mozambique, the final stage of which was dedicated to transferring responsibility for operation of the system to the local authorities (page 48), and the fog net project in Morocco. Some 600 m<sup>2</sup> of nets have now been erected in the Atlas Mountains and will soon be able to milk an average of 6,000 l and more of drinking water per day from the air (page 40) during the fog season.

In the area of disaster prevention, we launched the "Building Resilience in Bangladesh" project, in collaboration with the International Centre for Climate Change and Development (ICCCAD) and the UN University Institute for the Environment and Human Security (UNU-EHS) in Bonn (page 46). Its main focus is on strengthening the resilience of the population at risk. Furthermore, as a result of our positive experiences in Mozambique, we intend to install flood-warning systems in several local communities. The RISK Award, granted for the first time in 2012, also aims at protecting people against floods. From a total of 38 recommendations submitted, the "Flood warning in Beira" project was selected as the prize winner. Work on the project has already begun and is progressing rapidly (page 36).

In the area of microinsurance, the foundation has again lived up to its mandate to be the driving force in the sector. As in previous years, the 8th International Microinsurance Conference in autumn met with avid international interest (page 12). In April, the second volume was published of the educational textbook, "Protecting the Poor – A microinsurance compendium" (page 18). The standard work offers a synthesis of the latest trends in the different sectors of this growing market.

The successes of 2012 show that the foundation is on the right path and that people around the world benefit from our work. To present the scope of our work more effectively and also improve reading enjoyment, the foundation's 2012 report has taken on a new look. I would be very pleased if our articles spark your interest, and hope you enjoy reading the report.



Thomas Loster

Bangladesh, one of the poorest countries in the world, is regularly hit by cyclones and floods. This prompted the Munich Re Foundation to launch a project aimed at reinforcing the resilience of people at risk. The photo shows men on an auto rickshaw forging their way through flood waters in the Satkhira District in the south of the country.





Women in Saper Char, Bangladesh, meet for their weekly planning session. They talk about risks and risk management, for example, when the harvest must be brought in.

Right: People living along the major rivers are used to living with floods. This boy's way to his school near Sinojgonj on the Brahmaputra River leads him through hip-deep water levels that persist for weeks during the monsoon season.





# North-South research for development



There is widespread consensus that research is a vital pillar for transformation to worldwide sustainable development. Two examples are the need for a regionally resolved understanding of the impact of climate change, and a better understanding of the socio-economic implications of and a viable transformation to a green economy.

The notion of North-South cooperation has traditionally framed development research. While it has provided a wealth of insights, the present practice leaves considerable room for improvement. The overwhelming part of present research is funded by institutions in the “global North”, i.e. the wealthy industrialised countries, while most of the pressing problems concern people in the “South”. Although sensitivity regarding this pattern has grown among the development research actors, the discourse is still largely determined in and framed by the “developed” part of the world for the “developing” part.

This asymmetry might soon become obsolete for several reasons. First, emerging economies, such as Brazil, India, Indonesia and others, are likely to enrich the landscape for development research in terms of both funding and agenda-setting. Second, the search for global sustainability will need to alter the view on development itself. The themes of the Millennium Development Goals, e.g. eradication of extreme poverty, will continue to be a main issue for many countries of the “South”. On the other hand, the Sustainable Development Goals, emerging from Rio+20, will be of much more concern to the wealthy industrialised countries. While many of the so-called “least developed” countries are facing a poverty trap, it looks as if the rich countries are trapped in a non-sustainability pattern. Future inclusive sustainable development will have to address both these traps on an equal footing and recognise the close links between the two problem areas. Development research has hardly addressed this link thus far.

Nevertheless, there is hope that things will improve. Newly emerging international research initiatives are beginning to address the asymmetry of the North-South cooperation by attempting to build up institutional partnerships between universities in countries at different levels of economic development. Among them is the Twin Initiative of the United Nations University (UNU). A model example of such a twin partnership is the newly established Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES) with its two locations in Germany (Dresden) and Mozambique (Maputo), focusing on developing methods for an integrated management of water, soil and waste.

The twin institutes will build up common research and education programmes, and develop regional networks around both hubs. The aim of such a partnership is first to overcome the problems associated with the short-term nature of purely project-based research funding, which does not guarantee continuity beyond the project duration, and therefore often lacks sustainability. Second, the initiative aims at capacity building by developing attractive scientific working places in, and networks around, both twin locations, and therefore to counteract the brain drain often caused by development research projects, where the capacities are built up predominantly at research institutions in the traditional donor countries.

A second example is the new decade programme “Future Earth – Research for Global Sustainability”, initiated by the Science and Technology Alliance for Sustainability. The members of the Alliance are the International Council for Science, the International Social Science Council, the Belmont Forum (the group of the largest national funding organisations), UNEP, UNESCO, UNU and the World Meteorological Organization (WMO) as an observer. Bringing together a group of powerful research funders, international science organisations, service providers and development organisations, the Alliance is looking for a paradigm change in development research by linking the themes laid out by the Millennium Development Goals with the Sustainable Development Goals of Rio+20. I am convinced that this inclusive approach will offer new options for the exploration of truly sustainable future development routes.

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For further information on this issue:  
[www.ehs.unu.edu](http://www.ehs.unu.edu)  
[www.icsu.org/future-earth](http://www.icsu.org/future-earth)



**Jakob Rhyner**

is Vice Rector for Europe at the University of the United Nations (UNU) and Director of the university's Institute for Environmental and Human Environment and Human Security in Bonn (UNU-EHS). The institute explores social vulnerability and resilience. A major part of its research on developing countries is dedicated to environmental migration.







# Seven years of research — Increasing resilience in vulnerable nations



Seven years, seven Summer Academies: More than 150 young researchers from all over the world have been educated under the Chair on Social Vulnerability project. Experiences and ideas from a broad range of perspectives fuelled research work and brought forth new scientific findings.

Our joint Chair on Social Vulnerability with the UN University in Bonn is now concluding seven years of successful work. It has given research and science important impulses and led to a deeper understanding of vulnerability. As a result, the project has helped to strengthen the resilience of people affected in low-income countries.

Risk is a product of exposure, hazard and vulnerability. These two factors are decisive in defining how bad the losses following a natural disaster will be. Analysis of the loss potential, whether in politics, science or business, frequently focuses purely on physical or structural vulnerability. Social aspects and parameters are often neglected. When assessing environmental or climate impacts, the analyses often focus on “hard” facts such as the number of fatalities or damage to property and assets. Even the International Panel on Climate Change (IPCC) usually refers to quantifiable losses and less frequently to social structures in the countries affected by climate change.

However, people in low-income countries or fragile states are much more vulnerable to adverse effects than in affluent nations where more resources are available for protective measures. This resulted from the research performed by our Chair on Social Vulnerability at the UN University in Bonn. Moreover, the quality of social structures and processes decisively influence the cause and effect of climate change. And, as societies and the environment are constantly subject to an ongoing transformation process, they also influence each other – sometimes extensively.



## Knowing what people need

Since its inception in 2005, the Munich Re Foundation has concentrated its work on people at risk in developing and emerging nations. To acquire a better understanding of their needs, the foundation set up the Chair on Social Vulnerability project. Failures in development cooperation or well-meant but ineffective relief supplies prove that there are substantial shortcomings in the western world's understanding of people living in poverty.

The respective Chairs on Social Vulnerability, all reputed scientists (see insert), have trained more than 150 young scientists from 45 countries at the annual Summer Academies.

Research itself has also developed continuously over the years: where vulnerability factors such as water scarcity, life in slums or environment-related migration were at the centre of research work in the beginning, the focus increasingly shifted towards a concept for strengthening people's power of resistance, their resilience. This is the key for enabling people to cope with natural events better, and to adapt successfully to climate change. Together with the Institute for Environment and Human Security at the UN University in Bonn (UNU-EHS), the foundation has contributed decisively to the considerable progress achieved by research in this field.

For further information on this issue:

UNU-EHS Chair  
[www.ehs.unu.edu](http://www.ehs.unu.edu)

Munich Re Foundation  
[www.munichre-foundation.org/home/Projects/SocialVulnerability](http://www.munichre-foundation.org/home/Projects/SocialVulnerability)

## Holders of the Chair on Social Vulnerability and the topics of the respective Summer Academies

2006



Prof. Úrsula Oswald-Spring  
Universidad Nacional Autónoma de México (UNAM)\*  
*Water and catastrophes*

Safeguarding water supplies and waste-water facilities, flood, drought and poverty influence the severity of natural disasters.

2007



Prof. Hans-Georg Bohle  
University of Bonn\*  
*Megacities and slums*

Megachance – megacity – megarisk. Knowledge of the interactions between people, resources and urbanisation is crucial for our future.

2008



Prof. Anthony Oliver-Smith  
University of Florida\*  
*Environmental changes and migration*

Environmental change and migration are closely interwoven. Migration can be not only an involuntary response but also an adaptation to a changed environment.

2009



Prof. Tom Downing  
Stockholm Environment Institute (SEI)\*, Oxford  
*Tipping points in humanitarian crises*

Often, one single, smaller event can trigger a social crisis. These tipping points must be identified if humanitarian crises are to be avoided.

2010



Prof. Michelle Leighton  
University of San Francisco School of Law\*  
*Protecting environmental migrants*

People's safety and their vulnerability are shaped decisively by legal frameworks. However, to this day, there is still no binding legislation governing environmentally-related migration.

2011



Prof. Mohamed Hamza  
Stockholm Environment Institute (SEI)\*, Oxford  
*Climate change in fragile states*

Democratic and just processes only develop with great difficulty in fragile states. This makes the people living there much more vulnerable to extreme events.

2012



Prof. Susan Cutter  
University of South Carolina\*  
*From social vulnerability to resilience*

The more vulnerable the individual members of a group, the greater the likelihood of a high degree of social vulnerability of the group as a whole.

\* Institute during UNU-EHS chair occupation

# 2012 Summer Academy Strengthening societies — From social vulnerability to resilience



People in many parts of the world are threatened not only by natural disasters and poverty but also by social upheaval and political instability. The aim of the 2012 Summer Academy was to move vulnerability research in this area one step further: from describing vulnerability to exploring ways of strengthening societies and resilience.

The 2012 Summer Academy was held from 1 to 7 July, for the seventh time, at Schloss Hohenkammer near Munich. As in previous years, 20 outstanding young researchers were invited to pursue knowledge through research with the support of senior experts connected with the UN as well as renowned professors. The participants came from 13 countries, representing all the continents except Australia. The seminars and workshops were therefore able to draw on experiences others had gained for example in Senegal, Sri Lanka, China, Indonesia and Brazil.

### Resilience increases the scope for dealing with negative events

The PhD students were given the task of analysing ways of classifying empirical examples of individual, social or ecological vulnerability according to magnitude, loss/damage potential and duration. In most cases, no clear distinction can be drawn, for example between individual and social vulnerability, since the different systems are interdependent: the more vulnerable the individual members of a group, the greater the likelihood of a high degree of social vulnerability of the group as a whole.

Resilience describes the ability of an individual or a society to adequately react to an existing or anticipate a potential future negative event. This includes planning available solutions, mitigation of consequences and options for recovering from the event. Resilience research also incorporates the potential to act swiftly and still adapt successfully to new environmental parameters in the long term. The quicker, more flexible and comprehensive an individual, a group or a society, for example, is able to cope with the impacts of climate change, the greater its resilience.

### Varied examples of resilience

In dialogue with the experts, the participants formulated research proposals designed to critically review the current scientific frames of reference of vulnerability research. One particularly important aspect was to take due account of corresponding directives and actual political processes (for instance regulatory frameworks). The PhD students pooled their experiences from a wide variety of research and field projects, and analysed the following main points:

- How is climate change perceived by indigenous peoples in terms of their priorities, strengths and weaknesses?
- How can the local population be involved in coping with risks from various sources?
- How vulnerable is the infrastructure to the impacts of climate change?
- How can decision-making efficiency be improved in the field of risk management?



The four key questions were examined on the basis of four case studies. Cases that differed widely with regard to both location and content – from Germany, to Senegal, Brazil and Indonesia – were deliberately chosen to demonstrate the diversity of resilience research. The focal topics covered a wide range of issues, including climate change and natural catastrophes, the role of the local population in decision-making processes and the stability of the infrastructure. These variables naturally differ significantly from one region to another. Only when they are considered in the overall risk context can suitable steps be initiated towards a more resilient society.

## Outlook

2012 marked the end of Munich Re Foundation's funding of the Chair on Social Vulnerability at the UN University Institute for the Environment and Human Security (UNU-EHS) in Bonn, and thus also our series of Summer Academies at Hohenkammer. The Munich Re Foundation is proud to have formed, together with reliable partners, an exceptional network of young scientists whose expertise will enrich future conferences, organisations and political processes.

The foundation will continue to support the education of young scientists in the future. Our new Bangladesh project will continue in the spirit of the Summer Academies. You can read more about this project on page 46.

Left: Susan Cutter from the University of South Carolina headed the last Summer Academy which bore the title, "From social vulnerability to resilience".

Right, middle: The historic moated castle in Hohenkammer, located well outside Munich, proved to be the ideal venue for academy events.

Below, right: Daminda Solangaarachchi from Sri Lanka (left) and Tiodora Siagian from Indonesia debating at the Summer Academy about how the right steps to a more resilient society can be initiated.



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For further information  
on this issue:

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UNU-EHS Chair  
[www.ehs.unu.edu](http://www.ehs.unu.edu)

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Munich Re Foundation  
[www.munichre-foundation.org/home/Projects/SocialVulnerability](http://www.munichre-foundation.org/home/Projects/SocialVulnerability)

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Social vulnerability

## UNU Keystone Conference 2012 — Input for the Framework Convention on Climate Change

The Keystone Conference brought our Summer Academy series launched in 2005 and our research project on social vulnerability at the United Nations University Institute for Environment and Human Security (UNU-EHS) to a close. The conference took place from 8 to 10 October 2012 in Bonn and offered the best young scientists from the alumni network a forum at which to present their ideas.

Under the title “From Social Vulnerability to Building Resilience in the Context of Climate Adaptation”, the UNU-EHS and Munich Re Foundation together invited outstanding young researchers from earlier Summer Academies and professors from the UNU Chair on Social Vulnerability project to Bonn. The goal of the Keystone Conference was to develop approaches for a programme of the United Nations Framework Convention on Climate Change (UNFCCC) dedicated to the motto “Loss and Damage”. Within the framework of this programme, new ways will be sought to help the global community handle the inevitable impact of climate change and also curb climate change.

The UNFCCC work programme addresses a broad agenda. It investigates the effects of climate change on different habitats, flora, fauna, people and their possessions. The emerging nations play a central role. The focus is on the key questions of what consequences the pending changes will have with regard to the vulnerability of societies, how poverty in threatened regions spreads, and how we can ensure a good quality of life for coming generations. Stakeholders from all over the world have been invited to fill the UNFCCC programme with content.



The Keystone Conference made an important contribution. It provided young researchers not only with the opportunity of contributing and analysing their own academic experience, but also with the possibility of translating their findings into concrete recommendations to politicians.

In one of the working groups, the conference participants discussed how “Loss and Damage” can be defined in universal terms and what possibilities exist for mitigating the impact of climate change. The outcome showed that it is of no consequence whether the focus is on geographic analysis methods, disaster analyses and trends or human science studies on vulnerability and resilience. What is actually decisive is that a reliable and, above all, compelling data basis is created, so that these problems become part of the political discourse and suitable solutions can be found.

A second group addressed the question of how findings of scientific studies can best be integrated into the political process. Which form and above all which language are necessary to efficiently combine science and politics? Saleemul Huq, Director of the International Centre for Climate Change and Development (ICCCAD) and a leading climate scientist from Bangladesh, made one thing clear: “Science cannot complain if it is not taken seriously by politics as long as it fails to adopt the often complicated-sounding language of politics. The United Nations’ Framework Convention on Climate Change will only be prepared to consider proposals that speak the language of the decision makers and strike a nerve with them.”

The “Bonn Dialogues” symposium served as a first test for the political relevance of the subjects of climate change, social vulnerability and resilience in the face of political reality. The event staged by the UN University, the city of Bonn and the German Committee for Disaster Reduction (DKKV) and hosted by Germany’s international broadcaster Deutsche Welle in Bonn, tried to approach the issues of climate, nutrition, water and energy from an interdisciplinary perspective. The symposium and the conference were held simultaneously, giving experts from the UNU network the opportunity to participate in discussions with a UNFCCC chief of staff on the podium.

The findings of the Keystone Conference were published in a UNU publication (“Policy Brief”) and submitted to the “Loss and Damage” programme. We wish to make this contribution, which reflects the perspective of the seven Summer Academies, and provides a boost to the international climate debate.

Left: David Wrathall from the University of California, Santa Cruz, (left) and Patrick Sakdapolrak from the University of Bonn are both members of the alumni network of the UNU project. Together with their fellow students, they drew up a policy paper for improved climate protection.

Right and below: Parallel to the conference, the “Bonn Dialogues”, an expert panel on adaptation to climate change, was broadcast at the Deutsche Welle studio in Bonn. From left to right: Saleemul Huq, ICCCAD, Bangladesh, H. E. Mosud Mannan, Ambassador of Bangladesh in Berlin, Anke Rasper, Deutsche Welle, Thomas Loster, Munich Re Foundation, and Daniele Violetti, UNFCCC.




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For further information on this issue:

Bonn Dialogues  
[www.bonn-dialogues.org](http://www.bonn-dialogues.org)

UNU-EHS Chair  
[www.ehs.unu.edu](http://www.ehs.unu.edu)

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# 8th International Microinsurance Conference — More than 44 million low-income Africans are insured

“Trust arrives on foot but leaves on horseback.” H.R.H. Princess Máxima of the Netherlands quoted this old Dutch proverb in her keynote speech at the opening of the 8th International Microinsurance Conference. The event was held in Dar es Salaam, Tanzania from 6–8 November 2012.

“There is a need for us as policy makers to act in concert with other stakeholders, such as the organisations represented at this conference, to explore other means of serving low-income people”, explained Dr. Mohamed Gharib Bilal, Vice President of the United Republic of Tanzania, in his opening speech. “Every effort is required to reach the poor. This indeed is what this conference is all about”, the Vice President concluded.

With 590 participants from around 60 countries, we had the strongest attendance by far since the beginning of the International Microinsurance Conferences in 2005.

During three days, a total of 28 different work groups addressed issues such as the status of the microinsurance sector in Africa and the rest of the world, agricultural insurances for low-income farmers, and case studies on success and failures. Furthermore, the UK Actuarial Profession and the International Actuarial Association presented actuarial training modules for microinsurance at the conference. These training modules explain key pricing steps for simple life microinsurance products.

## Microinsurance boom in Africa

The Munich Re Foundation and Making Finance Work for Africa (MFW4A) presented “The Landscape of Microinsurance in Africa 2012” study at the conference. It provides a comprehensive overview of the status and dynamics of the sector on the African continent. According to this study, more than 44 million people in Africa on low incomes have microinsurance. The number of insured people increased by 200% from 2008 to 2011.

“This is a tremendous achievement. If we also succeed in offering quality insurance services to large numbers of low-income households, it would be a significant step towards achieving the Millennium Development Goals”, Craig Churchill from the International Labour Organisation (ILO) and Chair of the Microinsurance Network stated.

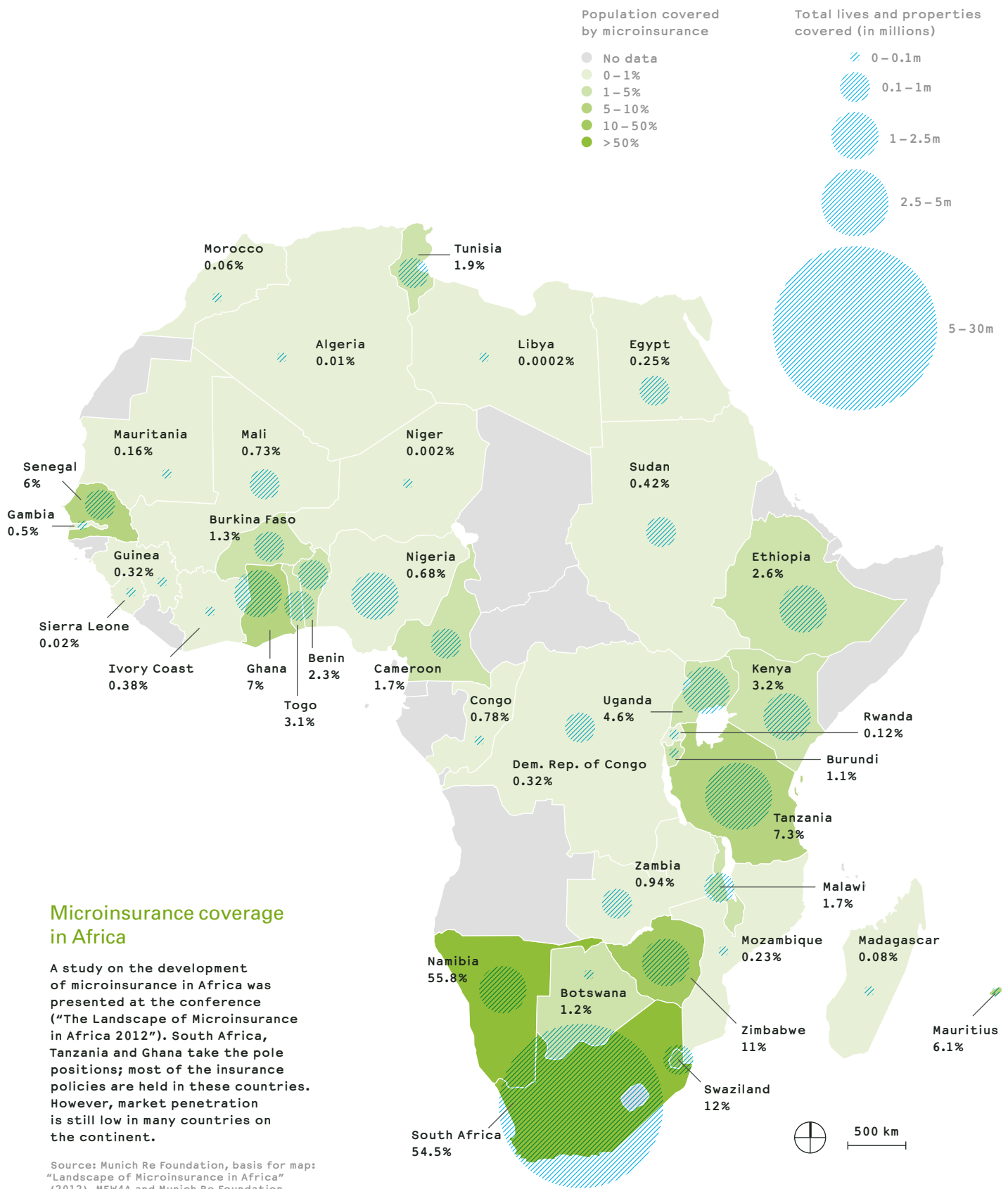
One finding of the study is that the vast majority of Africans with insurance coverage – close to 40 million people – have taken out life insurance. Other insurance products related to health, agriculture, accident and property are not as widespread on the African continent. This is not consistent with actual demand however, especially in the case of health insurance. “These findings should move the relevant stakeholders to take steps to address this demand”, commented Stefan Nalletamby, Partnership Coordinator of MFW4A.

The study also found that over 38 million of those insured live in Southern and Eastern Africa, and 27 million in South Africa alone. In Tanzania, the microinsurance sector is developing at a steady pace.

## Key data about microinsurance in Africa 2008–2011

- About 44 million people have microinsurance, of whom 60% are in South Africa.
- The number of people having microinsurance increased by more than 200% from 2008 to 2011.
- 90% of all microinsurances are life insurances.
- Associations and mutual insurances are the most significant players among the providers.
- Premiums from life insurances in Africa amount to around US\$ 46bn per year. Only 1% of these are micro insurances.
- A large volume of microinsurance business is transacted via mobile phones.





### Microinsurance coverage in Africa

A study on the development of microinsurance in Africa was presented at the conference ("The Landscape of Microinsurance in Africa 2012"). South Africa, Tanzania and Ghana take the pole positions; most of the insurance policies are held in these countries. However, market penetration is still low in many countries on the continent.

Source: Munich Re Foundation, basis for map: "Landscape of Microinsurance in Africa" (2012), MFW4A and Munich Re Foundation

For further information on this issue:

Microinsurance landscape studies  
[www.microinsurancelandscape.org](http://www.microinsurancelandscape.org)

### Expanding microinsurance in Tanzania

The Tanzania Insurance Regulatory Authority (TIRA) provided detailed statistics on the development of microinsurance in Tanzania. The authority presented the results of a new diagnostic study, which forms the basis of a national strategy aimed at improving outreach and availability of microinsurance products. "At present, 3.3 million Tanzanians are covered by microinsurance, which represents about 7% growth in three years", reported Israel Kamuzora, Insurance Commissioner of Tanzania. "We are working with the Access to Insurance Initiative (A2II) to stimulate the market through new regulations. We run campaigns to raise awareness and acquaint a broad segment of the population with microinsurance", Kamuzora went on to explain.

Above: Numerous organisations presented their services on the sidelines of the conference. With over four million customers, MicroEnsure is the largest microinsurance broker worldwide.

Below: Israel Kamuzora, Commissioner of the Tanzania Insurance Regulatory Authority (TIRA), presents the latest data from his country. The number of microinsurance policies has increased by roughly 7% in the past three years.

### Trust is the key

The proverb cited in the keynote speech of H.R.H. Princess Máxima of the Netherlands, the UN Secretary-General's Special Advocate for Inclusive Finance for Development, referred to the lack of trust of the poor in the insurance industry. This makes adequate consumer protection an important aspect for sustainable development of the insurance markets. H.R.H. Princess Máxima closed her speech by calling for more knowledge, practical analyses and research. The Princess encouraged her listeners, "Do partner and coordinate even more widely, and join in national financial inclusion processes. This will help to achieve real benefits and protection for clients against risks".

### Conclusion and outlook

At the end of the conference, Dirk Reinhard, Vice-Chairman of the Munich Re Foundation and Chairman of the Conference Steering Committee, summed up the event with the following words: "The presence of 22 national regulatory authorities from countries around the world as well as the Vice President and the Finance Minister of the United Republic of Tanzania underlined the immense interest of governments. The benefits of microinsurance for low-income populations are also being acknowledged at the highest levels."







Above: Mohamed Gharib Bilal, Vice-President of the United Republic of Tanzania, answered journalists' questions during the opening ceremony of the 8th International Microinsurance Conference.



Below: The "Landscape of Micro-insurance" was presented to the press at the conference. According to the findings of the study, the African market has grown by 200% over the last three years. From left to right: Manfred Simbando, Insurance Association of Tanzania, Craig Churchill, Microinsurance Network, Israel Kamuzora, Tanzania Insurance Regulatory Authority, Dirk Reinhard, Munich Re Foundation, and Stefan Nalletamby, Making Finance Work for Africa.

The 9th International Microinsurance Conference will be held in Indonesia. At that conference, the Munich Re Foundation and the Microinsurance Network will also play an important role not only in national but also financial inclusion processes all around the world. The 2013 conference will address a wide variety of topics again, such as the Takaful insurance for Islamic countries or measures for the improvement of risk management for poor populations in the event of natural disasters. The Munich Re Foundation will also be represented at local symposiums in 2013 together with its partners. The Learning Sessions in 2013 will be dedicated to West Africa and the MENA region.

### About the 8th International Microinsurance Conference

The 8th International Micro-insurance Conference was hosted by the Munich Re Foundation and the Microinsurance Network with the support of the Tanzania Insurance Regulatory Authority (TIRA), the Association of Tanzanian Insurers (ATI), the German Agency for International Cooperation and the Federal Ministry for Economic Cooperation and Development (GIZ/BMZ), Making Finance Work for Africa (MFW4A), the African Insurance Organization (AIO), the Insurance Regulatory Authority of Uganda (IRA), the Uganda Insurers Association (UIA), the Georgia State University Center for the Economic Analysis of Risk (CEAR), the African Development Bank (AfDB), the International Cooperative and Mutual Insurance Federation (ICMIF), the FinMark Trust and the International Labour Organization (ILO).

For further information on this issue:

Microinsurance Conference  
[www.microinsuranceconference.org/2012](http://www.microinsuranceconference.org/2012)

# Preventive healthcare for coffee farmers in Tanzania



Microinsurances cover a wide range of models and solutions. The coffee farmer cooperative in the foothills of Mount Kilimanjaro in Tanzania uses this instrument to offer its members healthcare in the event of illness.

The Kilimanjaro Native Cooperative Union (KNCU) is Africa's oldest cooperative and represents over 150,000 coffee farmers. The members of the cooperative, mostly small-scale coffee growers cultivating a modest area of half a hectare or less, have their harvested beans processed and sold by the cooperative. The cooperative's managers handle quality assurance, fair trade, education and much more. Despite hard work, most of the households have only a meagre income, averaging the equivalent of €200 to €300 a year. This is a sum that Simon Petro Mongi can only dream of. The coffee farmer lives with his wife, daughter and grandchild in a hut in Marangu, near Mount Kilimanjaro. His field measures just about 0.3 hectares, in good years it generates a harvest of up to 150 kg. In 2012, however, it only produced 70 kg.

In 2011, KNCU created a micro-insurance scheme with the help of MicroEnsure, the largest microinsurance broker worldwide, and the Dutch PharmaAccess Foundation, which supports healthcare measures in Africa. The scheme aims to establish the Health Plan concept in Tanzania that is already in operation in Nigeria and Kenya. The undertaking is intended to improve healthcare for the population as a whole. In addition to insuring individuals, further important components of the programme are thus the upgrading of hospital and training for healthcare professionals. The Health Plan covers medical examinations and smaller operations. Treatment for malaria and chronic illnesses, mostly respiratory system disorders, is one of the most important coverage components.



In 2011, the KNCU Health Plan launched its work in the villages. Simon Mongi immediately registered himself and his family, along with 5,000 other members of the cooperative. For just €10 a year, he, his wife, daughter and grand-child are now all covered by health insurance. The premium should actually be higher, but international sponsors contribute €18 per premium to subsidise the programme. When Mongi had malaria in 2012, which is widespread in the region, he was treated in the nearby hospital. The Health Plan assumed the costs.

#### Expansion of local hospital

To accommodate the growing numbers of members, more than 400 hospital staff have been trained in Nigeria, Kenya and Tanzania since 2007, and numerous clinics modernised. Over 50,000 malaria tests conducted, care provided for 26,000 pregnancies – these are impressive figures that speak for the Health Plan. In Tanzania, hospital expansion is in progress.

Not far from Marangu, the Mboni Hospital has, under the Health Plan, developed from an outpatient day clinic into an impressive, district hospital. It now has additional examination rooms for men and women as well as a modern delivery room. A tank holding 5,000 litres of water facilitates treatment and improves hygiene. Training of the Mboni staff has been completed, and up to 200 patients can now receive medical care every month.

2012 was the UN International Year of Cooperatives. The KNCU can be proud of its achievement, now being able to offer its members healthcare coverage through microinsurance. And KNCU has proven that microinsurance can offer more than healthcare coverage alone.

**Left:** Local hospitals are also modernised under the Health Plan introduced by the managers of the Kilimanjaro Native Cooperative Union (KNCU) for coffee growers in 2011.

**Below:** This market vendor lives with her children and grandchildren in Marangu, a small village near Mount Kilimanjaro. She is a member of the KNCU coffee growers' cooperative and can obtain medical services through the Health Plan. A family of four pays an annual premium of around €10.

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For further information on this issue:

Kilimanjaro Native  
Cooperative Union  
[www.kncutanzania.com](http://www.kncutanzania.com)

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The second volume of the compendium, "Protecting the Poor", was first presented at a conference in Twente, Holland. The book was also in great demand at the 8th International Microinsurance Conference in Tanzania.

Microinsurance

## Second volume of microinsurance compendium presented

Following the great success of "Protecting the Poor – A microinsurance compendium", published in 2006, the International Labour Organization and Munich Re Foundation together presented a second volume in April 2012. It offers a synthesis of the latest trends in the different sectors of this growing market and closes existing gaps.

The new compendium was presented on the occasion of the 2012 Research Conference on Microinsurance held from 11 to 13 April at the University of Twente in the Netherlands. 150 participants from all around the world also used the annual International Microinsurance Conference as a platform for discussion. The 24 podium discussions and working groups focused on the topics of client value, a weather index for agricultural risks and health insurance. In addition, young academic researchers were given the opportunity to present new research projects.

The market for microinsurance is growing dynamically. In her inaugural speech, the UN Secretary-General's Special Advocate for Inclusive Finance for Development, Princess Máxima of the Netherlands, emphasised the importance of microinsurance and its influence on people's livelihoods. However, according to Princess Máxima, insurance providers need more information, in order for them to evaluate risks more accurately, develop the right products and make meaningful investments.

"Since 2008, we have seen numerous innovations emerging to overcome the challenges of providing viable insurance services to low-income people", added Craig Churchill, Team Leader of the ILO's Microinsurance Innovation Facility and Chairman of the Microinsurance Network. Today, already 500 million people have access to micro products, which offer basic protection, for instance in case of illness or death. China and India, which account for some 80% of the market, have established themselves as growth centres.

The new compendium in English comprises 26 chapters, covering a broad range of topics. In addition to the latest trends in health, life and agricultural insurances, the contribution of microinsurances in strengthening the resilience of societies was also addressed and diverse business models discussed. A Portuguese translation is currently underway. French and Spanish versions are planned for the coming years.

### Research Conference on Microinsurance 2012, Twente

The conference in Twente was organised by the hosting university, together with the Microinsurance Network, the Munich Re Foundation, the US Center for Economic Analysis of Risk, the German Institute for Economic Research (DIW), the University of Mannheim, the ILO, ADA, which is a Luxembourg non-profit organisation, and the Dutch Ministry of Foreign Affairs.

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For further information on this issue:

Microinsurance compendium  
[www.microinsurance.compendium.org](http://www.microinsurance.compendium.org)

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Three questions  
put to...  
Her Royal Highness  
Princess Máxima  
of the Netherlands,  
United Nations  
Secretary-General's  
Special Advocate  
for Inclusive Finance  
for Development



H.R.H. Princess Máxima of the Netherlands being presented Volume II of the compendium "Protecting the Poor" by Craig Churchill, Chairman of the Microinsurance Network. As the UN Secretary-General's Special Advocate for Inclusive Finance for Development, a role to which Princess Máxima was appointed in 2009, she promotes worldwide access to financial services. Since June 2011, she has also been Honorary Chair of the G20 Global Partnership for Financial Inclusion.

What do you think is the role that microinsurance can play to fight poverty?

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In my work on financial inclusion, I have seen the devastating impact of unexpected shocks on individuals and entire communities. When a family can no longer earn income or have huge expenses they tend to sell productive assets, pull children out of school, or take expensive loans in order to get the care they need or hold on to what little they have. As a result, daily priorities such as food, education, and shelter suffer, and the long-term consequences are dire. In fact, an estimated 100 million people fall into poverty annually due to healthcare costs.

This is where microinsurance has so much potential. Weather-indexed insurance cannot prevent droughts or floods that destroy crops. But it can mitigate the impact in future seasons by replacing seeds and fertiliser. Home insurance can help families rebuild after fire, flood or mudslide. Health insurance can cover costs of hospital, doctors and medicine, and enable a worker to recover from an accident without having to sell productive assets or take an expensive loan or just do without. The impact of this can be dramatic. In Mexico, until the late 1990s nearly 7% of families were dragged below the poverty line each year by medical emergencies. By 2010, this had fallen to less than 3% following the introduction in 2004 of a government insurance programme, Seguro Popular, to create universal access to healthcare.

During the microinsurance research conference in Twente in April 2012, the ILO and the Munich Re Foundation launched the second volume of the microinsurance compendium. From your perspective, what is the value of such a publication in the attempt to increase knowledge and reduce financial illiteracy?

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The good news is that more insurance reaches lower-income populations every day, and there is so much interest. But, we have also seen that some products and efforts have been less successful than hoped. Or they are too costly, or are not being taken up, or do not have the desired impact. Calling attention to issues and sharing information, best practices and data about what works – and what does not – is so very important to changing this. This is where publications like the Compendium come in, as well as academic studies, reports from pilot programmes and also in-person conferences and seminars.

Research demonstrates that trust is critical in financial services, including microinsurance and especially in new markets. Financial literacy enables clients to make informed choices and helps to align expectations – and thus builds trust. Understanding this, successful providers treat client education as an integral part of microinsurance. This can include more formal education programmes as well as assistance from agents, careful design of products to consider local context, culture and needs, and marketing. Financial

education is equally a responsibility for governments and policy makers. I hope that publications and research of all kinds will look into best practices and policies to achieve financial education.

What are the most pressing barriers that we need to overcome in the next three to five years to increase the access to microfinance and microinsurance substantially?

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For all the good news, microinsurance still faces challenges, particularly in making many more products more widely available in more countries. To do this, we need to meet client demand, build trust and create impact. Only when we truly understand demand will we design products that have the right features, the right prices, and the proper delivery mechanisms. When products are valued by clients, they will be used. There is a Dutch saying: trust arrives on foot, but leaves on horseback. So, it is very important that microinsurance steadily delivers real value and grows carefully in order to build trust in both the products and the companies.

It is also important that microinsurance consider impact, which is not necessarily the same as demand. We see this, for example, with preventative healthcare, which is often not in big demand, but can have a big impact. It is one reason why countries like Brazil, Colombia and Mexico are making cash transfers to poor households conditional on visiting health clinics. Conversely, there are insurance products that are in demand, but have little social-welfare impact – such as cover for loss of mobile phones.

Finally, we need to move from pilots to scale and sustainability. This will not happen by addressing microinsurance in isolation. It requires policy makers and providers in insurance and social protection to work with each other and with stakeholders in agriculture, environment, health, communications, and financial services. For example, partnerships among mobile phone companies, insurance providers and electronic payment systems, mobile money and agent banking are making small, regular premium payments convenient and affordable to poor people.

## “Learning Sessions” — Microinsurance for Ghana



Ghana's Commissioner of Insurance, Nyamikeh Kyiamah, opened the “Learning Sessions – Ghana 2012”. Some 170 insurance experts took part in the event.

Our “Learning Sessions” constitute a new event format tailored to issues that are specific to a particular country or region. They are complementary events to the annual International Microinsurance Conference. Following the 2011 events in London, the 2012 “Learning Sessions” were held in May in Accra, the capital of Ghana. This country offers a great potential for microinsurance.

The event was jointly hosted by the National Insurance Commission of Ghana (NIC), represented by Ghana's Commissioner of Insurance, Nyamikeh Kyiamah, and the German Agency for International Cooperation (GIZ) in partnership with three high-profile organisations active in the microinsurance sector: Making Finance Work for Africa, which is a financial sector development initiative, the Microinsurance Network and the Munich Re Foundation. Around 170 international experts from insurance companies and development organisations as well as scientists and representatives of supervisory authorities participated in the first African “Learning Sessions”.

The main focus of the event was on the regulatory framework in Ghana, the importance of consistent data collection and the appropriate pricing of microinsurance products. Furthermore, the latest research findings regarding client requirements, as well as diverse distribution channels and innovative technologies for approaching clients, were presented.

### Enormous potential

The vast scope of untapped potential for microinsurance in Ghana is revealed by the fact that only 4.1% of the 24 million people in Ghana had access to insurance in 2010. The NIC wants to actively spearhead the development of microinsurance in Ghana through the help of an appropriate regulatory framework. The purpose of this insurance directive will be to define specific criteria with respect to affordability and target groups. Insurers will be able to market the respective products just four weeks after these criteria have been fulfilled, subsequent to registration with the NIC. There has also been a proposal to permit unlicensed insurance agents to sell microinsurance policies.



Ghana is an excellent example of how mobile banking, i.e. financial services via mobile phone, can revolutionise the financial sector in developing countries. The low transaction costs are a significant advantage of the “mobile money”. At present, there are 15 companies offering a total of 20 microinsurance products, particularly in the area of life insurance and non-life insurance. Health insurance is not offered. In 2011, the premium income in Ghana grew by roughly 50% over the previous year, to GHS 3.9 million (€1.57 million). The most important distribution channel for microinsurance is by far the mobile telephone, which reaches more than 400,000 clients, or 80% of all microinsurance holders.

According to a market study by the GIZ and NIC, the range of products offered by the insurance companies must cater more specifically to clients’ actual needs. Almost 65% of microinsurance clients are women, 70% are self-employed. Half of the clients earn less than €165 a month. Insurance against sickness or disability is a top priority. In addition to this, it is important to foster confidence in insurance companies and explain the products more clearly. Many clients still do not understand the basic principles of insurance.

### Education is essential

To ensure that the market can continue to grow successfully, greater numbers of more highly qualified staff will be required in the future. At the same time, well-trained insurance experts must be given better career opportunities. In the event that qualified staff are not available, actuarial tool kits could help close knowledge gaps. Tool kits for life, health and agricultural insurance developed by the International Actuarial Association in cooperation with British and other international actuaries were presented at the 8th International Microinsurance Conference in November 2012 in Tanzania (see page 12).

The “Learning Sessions” provided important insights and offered a platform for making and maintaining contacts. They also helped create a better understanding of the strategy and role of the NIC in developing the local insurance market. In view of the number of participants, which exceeded all expectations, the Munich Re Foundation and its partners are currently examining the possibilities for holding further “Learning Sessions” in 2013.

### Main findings of a survey on socio-economic profile

A survey of attitudes and demands of microinsurance clients conducted on behalf of the National Insurance Commission (NIC) and GIZ

- Only 4.1% of the 24 million people in Ghana had access to insurance in 2010.
- Microinsurance premium income in Ghana grew from Ghanaian Cedi GHS 2.6m (€ 1.05m) in 2010 to GHS 3.9m (€ 1,57m) in 2011, representing a growth rate of about 50%.
- The average client of microinsurance products is self-employed and has a monthly personal income of between GHS 200 and 400 (€ 80–160).
- The majority of clients were females (65.5%), who lived in (semi-)urban areas (83.1%).
- The results indicate that many clients do not understand the basic principles of insurance and the product terms and conditions.
- Health, traffic/accident and disability insurance rank highest with regard to the perceived risk exposure and insurance needs of clients.
- 80% of all microinsurance is distributed using mobile phones.

Only 4.1% of the 24 million Ghanaians had access to insurance in 2010. Many small business owners, in particular, do not have insurance coverage.



For further information on this issue:

Microinsurance  
Conference  
[www.microinsuranceconference.org](http://www.microinsuranceconference.org)



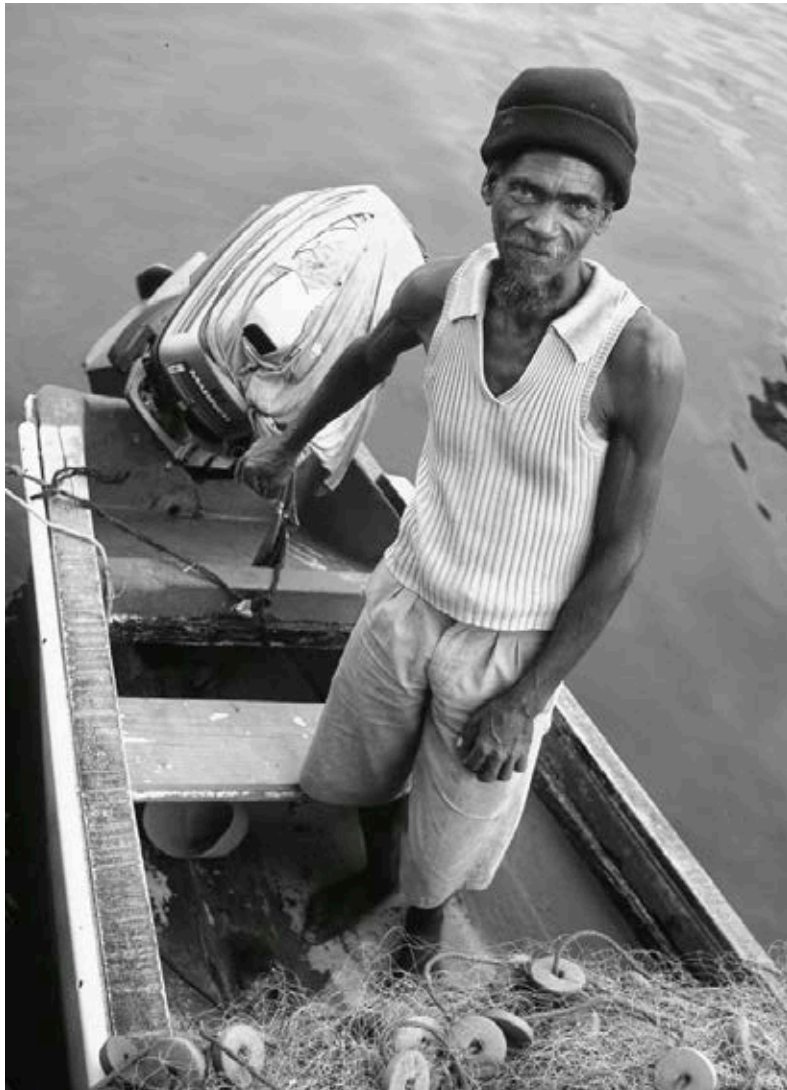
Tropical storm Sandy devastated parts of New York City and inundated thousands of houses with its record storm surge. The photograph was taken in Queens where short-circuiting and fire in a gas pipeline set many houses ablaze. As an affluent country, the USA can cope with such events through the strength of its own resources. In many parts of the world, however, people depend on outside help in the wake of disasters.

Right: A fisherman in Jamaica brings his boat into the harbour of Greenwich Town. At present, concepts are being developed to help people with low incomes reduce the effects of damage to their simple boats caused by extreme weather.





# Adaptation to climate change — New concepts for affected, low-income countries



Increasing losses due to climate change are threatening the livelihoods of many people, especially in low-income countries. Thus, the international community must not only promote climate protection but also provide financial support for adaptation measures.

As early as 2010, the World Climate Summit in Cancún passed a resolution calling for the foundation of a Green Climate Fund to help developing nations with adaptation measures. However, it still remains unclear how much money will be made available for this fund, despite the urgent need for financial aid to allow countries which are heavily affected by climate change to find new solutions.

Even though developing countries remained unscathed by spectacular events last year, the memories of the disastrous floods in Pakistan 2010 and 2011 or of the severe drought in Somalia in 2011 are still fresh. In Geo Risk Research at Munich Re, we analyse natural disasters and assess the risk potential of future losses on a daily basis. Our global documentation of all loss-relevant natural events, the most comprehensive of its kind in the world, confirms that weather-related loss events have increased significantly in developing and emerging nations. In fact, they have increased more than twofold in comparison to industrial countries when examining the time series since 1980.

2012 was another eventful year. This time, however, the USA was particularly affected, experiencing the warmest year on record in its history. Tornadoes, severe weather events and massive crop damage kept us and countless researchers in suspense. Tropical storm Sandy, which left parts of New York under water in October, brought the series of natural disasters in 2012 to a tragic climax.

While industrial countries such as the USA are able to handle events of this kind relatively well, people in low-income countries do not have this ability. Solutions must be found to help them quickly, not least because they have little or no insurance. Although insurance in this situation is just one of many adaptation measures, it is a very effective one. This does not mean that typical products, as they are widely known in industrial countries, should be established. The financial means of the people are restricted, households must use most of the available money to feed the family and procure other essential, life-sustaining goods.

This situation calls for new insurance concepts such as those suggested by the Munich Climate Insurance Initiative (MCII), an interdisciplinary panel of experts. Their concepts are tailored primarily to people who are engaged in economic activities in low-income countries and yet are poor. At the moment, the MCII is testing two pilot projects in the Caribbean. The Livelihood Protection Cover project enables fishermen, people working in the tourist industry and small-scale farmers to avail themselves of insurance benefits in case of excessive rainfall or wind damage. These people can use the money to quickly remedy the damage incurred and then return to their day-to-day business. If they are not able to repay their small loans, a further project, the Loan Portfolio Cover, assumes the debt-servicing obligations. This helps the claimants as well as the microloan bank and ensures that these people continue to have access to loans. If these pilot projects prove successful, they can be replicated in other regions.

These are just two examples of new insurance-based concepts that can help people in low-income countries. However, support is required for such coverage to become established. To promote their application and development, governments, sponsors and other funding organisations must assume a portion of the costs in the early phases. If climate-change-related risks are covered, the Green Climate Fund may make funding available.

Even though few commitments were made in this regard at the climate conference in Doha in December 2012, one thing is clear: funds will eventually become available. Negotiations at the political level, which are increasingly addressing adaptation and financing, confirm this. The natural disaster trends indicate a continued increase in pressure. Non-government organisations and aid organisations should begin with essential preparations now, because as soon as the funds become available, action must be taken quickly. Investments in preventive measures can generate quantifiable success and will then become evident.

The delegates of the 195 signatory states have ruled that the "Loss and Damage" programme is to be continued in the coming years. To this end, the MCII has already conducted a comprehensive analysis of possible prevention and risk transfer measures. We will continue to support this programme, in order to facilitate the adaptation to climate change for people in low-income countries.

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For further information on this issue:  
[www.munichre.com/geo](http://www.munichre.com/geo)  
[www.climate-insurance.org](http://www.climate-insurance.org)



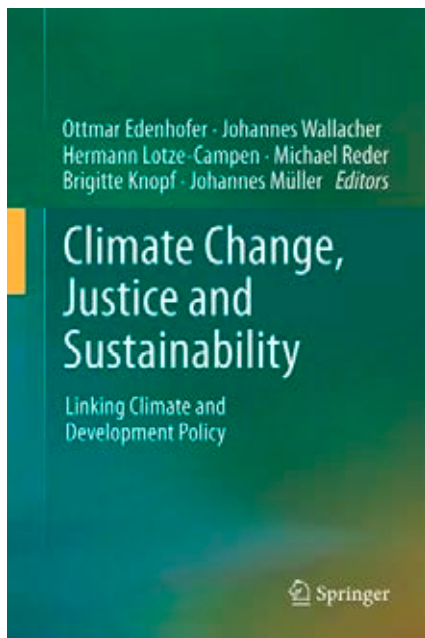
**Peter Höppe**

is Head of Geo Risks Research at Munich Re and Vice-Chairman of the Foundation's Board of Trustees. As part of the Munich Climate Insurance Initiative (MCII), he promotes insurance solutions for adaptation to climate change.









Climate change and justice

## Climate protection as a human right

It is primarily the poor countries of the world that suffer from the impacts of climate change. They are justifiably calling for those responsible for climate change to assume greater responsibility – so far with modest success. A study commissioned by the Munich Re Foundation investigated how climate change can be counteracted with fair means and the integration of all nations.

New statistics on loss trends issued by the International Panel on Climate Change (IPCC) confirm the fact that poor countries, which are generally more vulnerable than rich nations, bear the main burden of climate change. All efforts of the climate conferences to curb climate change have so far only met with modest success. One major reason for this is that not all of the signatory nations, 195 at present, are integrated into the negotiations in equal measure.

Over a period of four years, the Munich Re Foundation, together with the Catholic relief agency Misereor, the Potsdam Institute for Climate Research (PIK) and the Institute for Social and Development Studies at the University of Munich (IGP), investigated how climate change can be curbed by fair means. Parallel to research and modelling projects, our partner, MISEREOR, organised workshops for the people affected in developing and emerging nations to find out how adaptation should be implemented at the local level. The project results have been summarised and scientifically referenced in a book entitled "Climate Change, Justice and Sustainability". It was published just in time for the major Rio+20 environmental conference in June 2012 and the 18th World Climate Summit in Doha, Qatar.

### Human rights as the foundation

The study builds on human rights, which call for freedom and equality and the moral obligation to practise solidarity. The resulting concept of justice aims at satisfying basic needs, equal rights for all human beings, inter-generational equity and fair negotiations. Applying this tenet, the 2°C target that the IPCC demands can be attained if all the available technological means are deployed. It is particularly important to take full advantage of all available technical capabilities and make greater use of renewable energy. Global emissions trading that would give the same emission rights to everyone around the world would offer enormous opportunities. Poorer nations could profit from such a system by selling surplus emission rights to industrial nations.

### Immediate action

However, technical solutions alone are not the answer. On the contrary, people who are particularly vulnerable must receive aid for adaptation. The "Climate change and justice" project has identified possible approaches for sustainable solutions in the future. Now it is up to politicians to act. Unless we act quickly, we will not only risk many people's right to a dignified existence but also jeopardise the prospects of future generations.

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For further information on this issue:

Global yet equitable  
[www.klima-und-gerechtigkeit.de](http://www.klima-und-gerechtigkeit.de)

Munich Re Foundation  
[www.munichre-foundation.org/home/Projects/ClimateChangeAndJustice](http://www.munichre-foundation.org/home/Projects/ClimateChangeAndJustice)

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## Interview with Ottmar Edenhofer — Climate change, justice and sustainability



Ottmar Edenhofer

is Chief Economist and Deputy Director of the Potsdam Institute for Climate Impact Research. In addition to this, he is also a senior member of the International Panel on Climate Change (IPCC) and has been a member of the Board of Trustees of the Munich Re Foundation since 2012.

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For further information  
on this issue:

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Potsdam-Institut  
für Klimafolgenforschung  
[www.pik-potsdam.de](http://www.pik-potsdam.de)

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The results of the “Climate change and justice” project have now been published by the Springer publishing house in a book entitled “Climate Change, Justice and Sustainability”. Over a period of four years, the Potsdam Institute for Climate Impact Research (PIK), the Institute for Social and Development Studies (IGP), MISEREOR and the Munich Re Foundation jointly investigated how global climate change can be curbed with fair global means. We spoke to the leader of the study, Ottmar Edenhofer, Deputy Director and Chief Economist at PIK.

Why has the book “Climate Change, Justice and Sustainability” come out at the right time? Will the subject play a role in the next IPCC report?

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It is still possible to achieve the 2°C target, but we have no more time to lose. To avoid or at least contain the dangerous impacts of climate change, we must take action today. The global community must agree on the amount of greenhouse gas emissions that could still be deposited in the atmosphere. The predominant scarcity of the 21st century is not one of fossil energy resources but rather one of limited storage capacity for greenhouse gases – in the atmosphere, the oceans and the forests.

One of the central questions that developing and emerging nations will face is whether and how economic growth can be disengaged from growing emissions. Up until now, economic growth and the increase of emissions have been closely linked. To combat poverty we need economic growth, which will enable the requisite investments in education, health and infrastructure. At the same time, if we want to prevent threatening climate change, we can no longer afford the accompanying increase in emissions. Herein lies one of the greatest challenges.

The research results that have gone into the making of this book were already used in the IPCC report on renewable energies (SRREN), and this material will also play a role in the Fifth Assessment Report.

Four partners, four perspectives. What was the most interesting insight that you gained from the joint venture?

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It is the task of science to identify paths that can be taken to confront existing and emerging problems. Politics and society must weigh the risks they are prepared to accept, and also which solutions can and should be chosen. Collaboration with the different partners certainly contributed to a deeper understanding of what is feasible and what is not. This will be important when the time for implementation comes – science alone can do no more than assist at that stage. The focus must be on involving affected locals as partners in finding climate change solutions.

What is the most important message of the project?

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The effects of climate change are unjustly distributed because the most heavily afflicted areas are the regions of the world which have contributed the least to its causes. Climate protection can be an important element in fighting poverty, and climate and development policies must therefore be closely interconnected. In this context, energy policies are a central component of sustainable development.

# Power and influence: Who controls the world's destiny?



The foundation offers the dialogue forums as a platform to draw attention to important topics and problems of our times. Last year's forums focused on the radical changes being wrought in the world order and on their consequences for the global economy and society. At the five evening events, leading politicians, journalists and researchers highlighted current trends, analysed interdependencies and answered questions posed by the audience.

The enormous interest of the guests reflects how resoundingly the topic has struck the nerve of the times. Registrations far surpassed the number of seats available. The recent tide of events provided an abundance of issues for debate: Arab revolutionaries in 2011 ousted long-reigning despots in Tunisia, Egypt and Libya with mass demonstrations and armed force within a short period of time – for many of us, completely unexpected – and then called for the development of democratic structures. At the same time, emerging nations in Asia and Latin America began to seek possibilities for exercising more influence on world affairs. The old power centres of the Western world still remain in the firm clutches of the euro crisis, which is being surmounted only with immense difficulty.

What traces is this global upheaval leaving at political, economic and social levels? What role will the distribution of resources play, what influence will the new media have and how should we deal with these things? Is our life style still attuned to a rapidly changing world?

## Global power structures are shifting

The opening event, "Aspiration and reality of power structures" on 3 February, already demonstrated that the traditional power structures are gradually falling apart. The bipolar world in which, for decades, West and East faced each other in clearly defined roles and ensured that the situation remained stable in an equilibrium of mutual fear, is history. "We cannot tell what precisely will change, but I can assure you: virtually nothing is as it used to be", Frank-Walter Steinmeier, Chairman of the SPD Parliamentary Group in the German Bundestag, commented in characterising the new situation. The parameters from which the world will ultimately take its orientation still remain unclear. "However, it will most certainly no longer be the old powers alone that will determine this new global order", the SPD party's 2009 chancellor candidate predicted. The economic success of many nations resulting from globalisation, particularly in Asia or South America, is accompanied by growing political ambition.



The forum on 17 April, "Changing economies – Do we need economic growth?" came to the conclusion that the financial and economic crisis of recent years is exerting an enduring influence on the new world order. It is contributing to a shift in the growth centres of the world in such a way that the emerging nations will have an important say in future. Whereas the BRIC states (Brazil, Russia, India, China) accounted for just 17% of the global economic output in 2001, their share today is already 25%. Against this background we must all realise and accept the fact that old organisation structures such as G7 and G8 no longer adequately represent the new balance of power.

#### New growth centres emerge

According to Thomas Mayer, former Chief Economist at Deutsche Bank, the financial crisis has divided the world up into three regions. "The USA and some countries in Europe overstepped the mark during the credit bubble; they more or less threw a huge party and financed their growth on credit", says Mayer. "They are only pulling themselves out of the crisis very slowly and will slide back again by the end of the decade", he predicts.

At the same time, there are winners, including states such as China and India, which are developing enormous growth dynamics due to market deregulation and integration into the global division of labour. Countries such as Germany profit from these new growth centres. They deliver commodities and expertise to the places where their know-how and technologies are in demand. "It's just like a party: whenever the USA and Europe are suffering from a hangover, the party service delivers its goods to where things are livening up, like in China, India and Brazil", explained Mayer.

The shifted balance on the global economy makes it difficult to seek solutions at international conferences. Within the framework of the G20, the emerging nations are increasingly gaining the impression that the industrial countries want to deprive them of the development that they, the industrial nations, already have behind them. The result is that resolutions passed by supranational organisations such as the United Nations or the International Monetary Fund are repeatedly being torpedoed by self-serving interests. None of the sides are willing to give the common good priority over their own interests. This applies in the same manner to the area of environmental protection – as at Rio +20 and the countless climate summits that achieved no tangible success – as it does to regulation of the financial markets.

Left: Frank-Walter Steinmeier, Chairman of the SPD Parliamentary Group in the German Bundestag, explains the new international balance of power. The parameters from which the world ultimately will take its orientation still remain unclear.

Below: Following their keynote lectures and a podium discussion, the experts answered questions from the audience.



### Commodity prices influenced by financial markets

A consensus on the question of how dwindling resources can be distributed in the face of increasing demand also belongs to the distant future. The urgency of finding an answer became evident at the “Raw materials and energy – Is the world’s wealth being redistributed?” forum held on 16 February. Supply shortfalls for a number of raw materials in the coming decades could be problematic for entire industrial sectors. If, in addition to this, monopoly-like market structures are also in place, as is frequently the case in the raw materials sector, then regulation is required. “My advice to the guardians of competition: you must take a closer look whenever mega-mergers create corporations that occupy a dominating position on the market for important raw materials”, urged Jürgen Trittin, Chairman of the Bündnis 90/Die Grünen Parliamentary Group in the Bundestag. He considers a lack of competition to be one of the biggest price drivers on the raw materials and energy market. And, in the opinion of the former Environment Minister, it is not the absolute availability of the natural resources alone that is of existential significance, but rather their availability at certain prices.

Already today, the market can no longer properly fulfil its regulatory function for certain commodity prices. “Speculations on rising or falling prices has a much stronger influence on price development than the physical demand itself”, criticised economist Heiner Flassbeck, Director of the Division on Globalisation and Development Strategies at UNCTAD. For example, he says, the listings for a tonne of corn more than doubled between 2009 and 2011. Flassbeck warned: “If we want to preserve the earth for our children, we must simulate scarcity today so that something remains for tomorrow.”

Closely related to this is the question of personal consumer behaviour, which was at the centre of the “New lifestyles – Perspectives for sustainable development?” forum held on 15 May. It is clear that the lifestyle of the developed countries consumes too many resources for us to be able to uphold it in the long term. An alternative approach would be to place greater focus on quality instead of quantity. “We should gear our demands to living well instead of having lots of things”, insists sociologist Fritz Reheis from the University of Bamberg. The key for him lies in deceleration, in other words, moving along the road to greater sustainability and individual time quality at appropriate speeds. Critical consumption can lead to drastic changes in production methods. Every individual has the power to contribute to a more sustainable economy.

Jürgen Trittin (left), Chairman of the Bündnis 90/Die Grünen Parliamentary Group in the German Bundestag, criticised the monopoly-like structures on the raw materials market. Dr. Patrick Illinger from “SZ Wissen” acted as moderator at the dialogue forums series.





Right: Lively debates followed the conclusion of the podium discussion. An exchange of views between audience and panel experts is the declared objective of the forums.



Below: Bernd Graff from the "Süddeutsche Zeitung" outlined the new role of the traditional media in times of Twitter, Facebook & Co.



**The power of social media is limited**

This change in attitude is becoming evident in today's technology-savvy 20- to 30-year-olds, the "millennials". The high-speed development of the new media has often made access to the internet and social networks more important for them than owning a car. The intensive exchange via web platforms such as Twitter or Facebook not only leaves its mark on patterns of consumption, the services can also be used to campaign for or against something. However, the myth that social media were conducive to the revolutionary mood of the Arab world in 2011 did not stand up under closer scrutiny at the "Facebook, Twitter & Co. – The power of (new) media" forum on 1 March. "I would say that we can forget that", was the concise but clear conclusion of Kurt Imhof, sociologist and media researcher at the University of Zurich.

Social media, he believes, are primarily egocentric interfaces and are mostly used for private purposes. Where revolutions or rebellions are transpiring, these services can be useful for spreading information or for agitation purposes, and, to a limited extent, for forming an opinion. According to Imhof, however, it is difficult, to sensitise the broad masses of users to specific subjects and create the type of topic-centred publicity that is important for democracy. The reason, he says, is that the classical journalistic role of putting things into context is missing here. "There is no click democracy; it cannot be organised with 'Like' buttons", explained Imhof in summing up his viewpoint. Furthermore, a centred mass medium (which would include social media) is an extremely fragile entity. The technical foundations for the internet or the radio masts for mobile data transfer can easily be shut down. In such a situation, flyers, traditional printers or copiers are much more reliable.



A detailed summary of the 2012 dialogue forums can be found on our homepage along with the accompanying "Positions" publication. It is available as a PDF file or as a printed brochure.

Munich Re Foundation  
[www.munichre-foundation.org/home/Projects/DialogueForums](http://www.munichre-foundation.org/home/Projects/DialogueForums)

The droughts in 2011 and 2012 led to famines in many countries in East Africa. People in Dabaab, Kenya, queue up for drinking water and food.

Right: Men in Sudan distribute peas in a refugee camp. The United Nations World Food Programme (WFP) is the largest humanitarian organisation of the UN. In some years it provides approximately 90 million people with food supplies.





# Insurance against crop failure – Combating hunger!



In times of financial and euro crises, the fact is easily overlooked that millions upon millions of people have been enduring an acute existential plight for many decades: they are suffering from hunger. However, there are initial approaches in Africa aimed at insuring the people affected, at least financially, against the impact of failed harvests, helping them to withstand the consequences of droughts.

The severe drought in the Horn of Africa in 2011 and 2012 brought awareness, as to how many people suffer from the effects of crop failures. More than ten million Africans were afflicted by malnutrition. Between 1983 and 1984 alone, approximately 300,000 people died of hunger in Ethiopia, which is hit regularly by extreme weather events, due to enduring heat waves and droughts. However, other countries such as Mali, Niger and Mozambique also make the headlines repeatedly.

It is incomprehensible that in our world today, which is being brought closer through globalisation, almost 870 million people – of whom 98% live in the developing world – still do not have enough to eat. According to UNICEF, some 150 million children in emerging nations were underweight in 2009, and nearly 16,000 children die of hunger-related causes every day.

It is thus high time to think about risk-transfer mechanisms that could help alleviate the most severe plights. Pilot projects with insurance elements for agriculture are emerging above all in Africa, where more than three-quarters of the countries are threatened or directly affected by drought. Such was the case in Malawi, where in 2005 peanut farmers and later also tobacco farmers were able to take out microinsurance against crop failure. However, the programme was only able to reach about a thousand small farmers.

According to the World Food Programme (WFP), the first humanitarian insurance was created in 2006 in Ethiopia. It was an index insurance based on a payment trigger. The deal offered was that if very little rain fell between March and October, the farmer associations would receive up to US\$ 7m. The great advantage of this deal is that funds begin to flow before the failed crops are actually harvested. Without trigger coverage, which is deployed early in the year, aid often comes too late, as the losses must first be laboriously assessed and claims checked. In the meantime, people suffer from hunger for months, use up their savings or are even forced to sell their possessions. Insurance can thus accelerate payment substantially. However, trigger covers are only meaningful if they reflect the actual loss situation (basis risk). It is difficult to create such covers and unfortunately they still fall short.

At the microinsurance level, new programmes are also being designed for small farmers, for example, the unique HARITA policy, which insures even the poorest of the poor, who have no income. It was developed in Ethiopia and is incorporated into a state-run welfare programme (Productive Safety Net Programme). Here, people without income can contribute their manpower, for example in agriculture, by performing composting tasks or by planting and cultivating protective vegetation. In a crisis, people who are too poor to pay premiums can still benefit. They receive monetary payments. Furthermore, additional education programmes help raise the farmers' risk awareness.

Today, HARITA reaches some 75,000 people in 13,000 households. The programme was conceived by the Columbia University in New York (IRI) and Oxfam together with local organisations and institutions such as Adi Ha Farmers Cooperative or Nyala Insurance. Swiss Re functions as a back-up. In 2012, HARITA paid out more than US\$ 320,000, enabling small farmers in 45 villages in Northern Ethiopia to purchase essentials.

Following an extended test phase on this new segment of insurance for small farmers, the first developments are now emerging. They aim to increase the food security of people faced with the threats of extreme climate hazards, a challenge which will gain significance in many regions as a result of climate change. Insurance may help as part of an all-round adaptation approach.

One thing all the programmes have in common is that, in addition to the flow of funds, they will also improve data flow and knowledge transfer. This is the decisive advantage of insurance-based solutions, where it is essential not only to provide help but also to mitigate the impact of drought disasters by means of improved protection against risk.



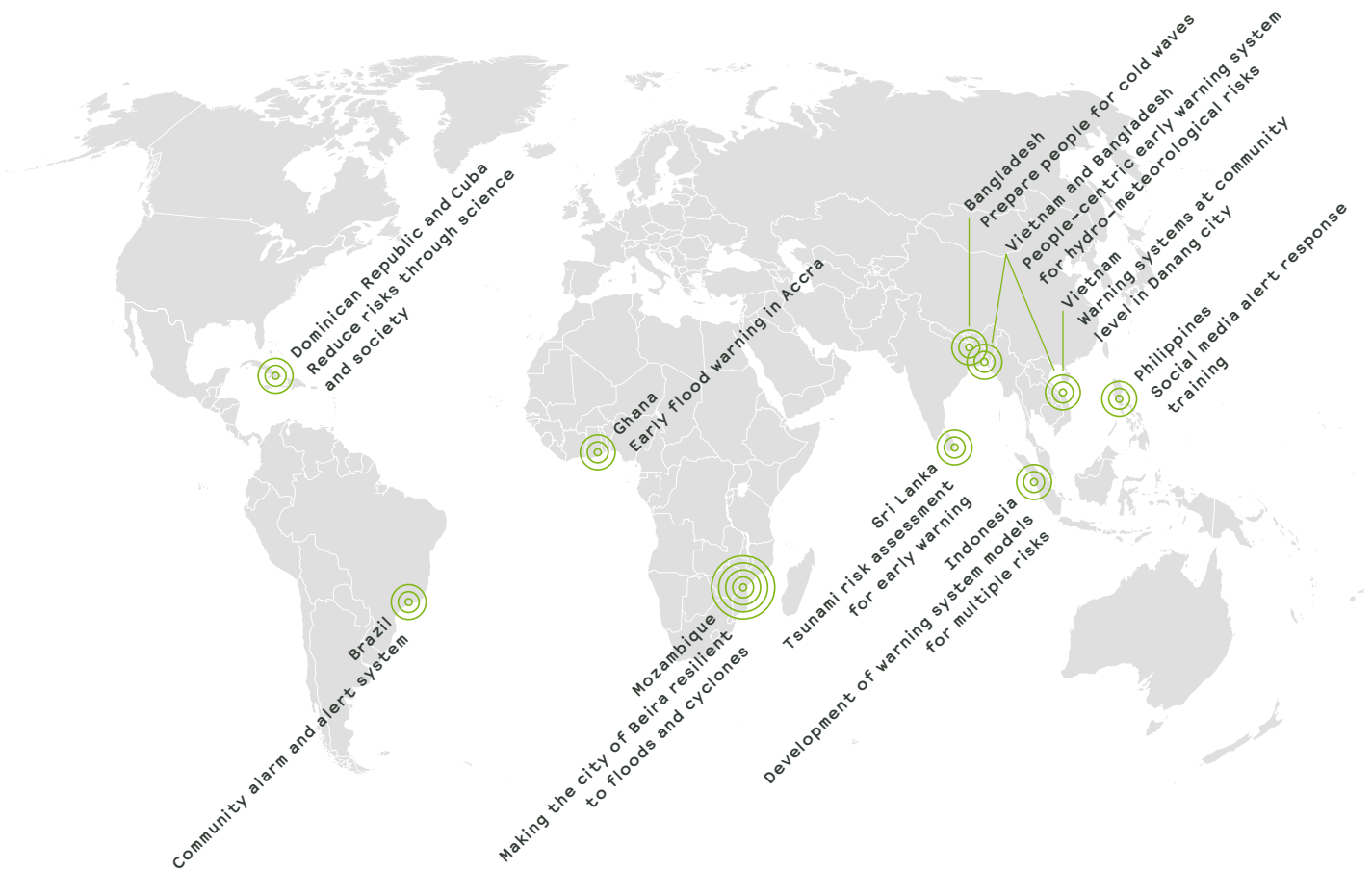
**Thomas Loster**

The Chairman of the Munich Re Foundation is an expert on climate change and disaster prevention. He has been working on disaster analysis and trends for more than 25 years.





# 2012 RISK Award — Early warning in urban areas



## Ten finalists for the 2012 RISK Award

For the first RISK Award, applications were submitted for 38 projects from all over the world. The map shows the ten best projects chosen by an international jury.

Source: Munich Re Foundation, draft 12/2012

Every year, natural disasters cost tens of thousands of human lives and rob millions more of their means of subsistence. Those wishing to undertake successful countermeasures must practise effective disaster prevention. The RISK Award, bestowed for the first time in 2012 and endowed with up to €100,000, supports local projects with role-model potential.

According to estimates of the United Nations, some nine billion people will be living within increasingly narrow confines by the year 2050, especially in towns and cities. The risk potential is escalating in these areas particularly due to natural hazards and climate change. The uncurbed population growth together with environmental and climate changes will most likely lead to ever increasing numbers of victims; complex technical systems and the infrastructure of a globalised world are additional risk factors. Countermeasures aiming to offset these developments must begin locally, with the people at risk.

The RISK Award supports local disaster prevention projects. The prize was jointly established by the Munich Re Foundation, the UN Secretariat of the International Strategy for Disaster Reduction (UNISDR) and the Global Risk Forum (GRF) headquartered in Davos.

The first RISK Award called for proposals on the topic of "Early warning in urban areas". The RISK Award was thus oriented to the "Making My City Resilient" campaign that has been spearheaded by the UNISDR.



## Candidates

Individuals, teams, institutions, towns and communities with ideas for innovative early warning systems were able to submit applications for the first RISK Award up until the end of December 2011. We received 38 project proposals in total. The projects came from all over the world and showed how much concern there is for improving disaster risk management – particularly in towns and cities. The broad range of applicants from governmental and non-governmental organisations, research institutes, universities and the private sector once more underscored the fact that risk reduction management is a task facing society as a whole. Responsibility for this work must not be borne by just one stakeholder.

## Topics

The project proposals also varied strongly with respect to their contents. The topics ranged from early warning systems in the areas of flooding, coastal protection and earthquakes to integrated capacity building and innovative training approaches for the affected sections of the population. Straightforward social projects were represented as well as complex technical facilities. Top-down approaches, bottom-up solutions and a mix of both rounded off the range of applications received.

## Award ceremony

The award was ceremoniously conferred on 26 August 2012 at the fourth International Disaster and Risk Conference (IDRC), in Davos, an ideal platform for the presentation of the RISK Award to its winners. The more than 900 participants from all over the world have set themselves the goal of reducing disaster risks and strengthening peoples' resilience. The prize money of €100,000 went to a project in Beira, the second largest city in Mozambique. The initiators of "Making the city of Beira resilient to floods and cyclones" IP Consult / Ambero Consult and the German Agency for International Cooperation (GIZ) aim to reduce the flood risks in the poor areas of the city with simple but compelling means. You can find a detailed description of the project on page 38.

## New calls for proposals in May 2013

The RISK Award will be presented every two years in the future. The next topic will be announced in May 2013 at the ISDR Global Platform for Disaster Reduction meeting in Geneva.

## Jury

It was no easy task for the jury to pick the winner of the 2012 RISK Award from so many applications. The panel was composed of seven members:

- Walter Ammann, President and CEO of the Global Risk Forum (GRF), Davos, Switzerland
- David Cadman, President of the ICLEI, the world's leading association of cities and local governments, and Councillor of the city of Vancouver, Canada
- Thomas Loster, Chairman of the Munich Re Foundation, Germany
- Hon. Maria Mutagamba, Minister for Water and the Environment, Uganda
- Haresh Shah, founder and Senior Advisor of Risk Management Solutions, Singapore
- Anisya Thomas, co-founder of the Fritz Institute of disaster response and recovery, USA
- Margareta Wahlström, head of the UNISDR and Special Representative of the UN Secretary-General (SRSG) for Disaster Risk Reduction, Switzerland.

For further information on this issue:

RISK Award  
[www.risk-award.org](http://www.risk-award.org)

Global Risk Forum  
[www.idrc.info](http://www.idrc.info)

UN Secretariat for Disaster Reduction  
[www.unisdr.org](http://www.unisdr.org)

# RISK AWARD

Risk Award 2012 Winner  
Early Warning in Urban Areas

The project:

Making the City of Beira resilient to floods and cyclones

of the organisation:

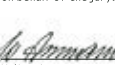
Association IP Consult / Ambero Consult, Mozambique, commissioned by Gesellschaft für Internationale Zusammenarbeit (GIZ), in partnership with the Government of Mozambique and the Local Disaster Risk Committees of Beira

is the winner of the RISK Award 2012.

The Risk Award partners UNISDR, GRF Davos and Munich Re Foundation would like to thank the applicant for the valuable contribution to help improve disaster risk management.

On behalf of the jury:

  
Margareta Wahlström  
UNISDR

  
Walter Ammann  
GRF Davos

  
Thomas Loster  
Munich Re Foundation







The 2012 RISK Award jury members are:

Walter Ammann  
President and CEO of Global Risk Forum GRF Davos, Switzerland

David Cadman  
President of ICLEI, and Councillor of the City of Vancouver, Canada

Thomas Loster  
Chairman of Munich Re Foundation, Germany

Hon. Maria Mutagamba  
Minister of Water and Environment, Uganda

Haresh Shah  
Professor Stanford University, Founder and Senior Advisor of Risk Management Solutions, Inc., India

Anisya Thomas  
Co-founder of Fritz Institute and former Managing Director, USA

Margareta Wahlström  
Special Representative of the UN Secretary-General for Disaster Risk Reduction (UNISDR), Switzerland

Christian H. Barthelt  
Risk Award Secretariat, Munich, 24 July 2012



The winning RISK Award project in Beira: in October 2012, 500 inhabitants of the Chipangara and Chota slums came together to practice coordinated evacuations. The centrepieces are concave bars, each containing a floater, the size of a table tennis ball, that triggers an alarm when floods occur.

Disaster prevention

## Winner of the 2012 RISK Award — A simple but highly effective system

“Making the city of Beira resilient to floods and cyclones” was the title of the winning project of the inaugural RISK Award. The prize money of €100,000 is well invested as it will contribute towards protecting Mozambique’s second largest city.

In the coastal areas of Beira, most notably in the slum districts of Chipangara and Chota, the population is growing rapidly. The infrastructure cannot keep pace with the uncontrollable, sprawling development of rudimentary housing. Drainage channels that appear harmless in dry weather rapidly swell and overflow during heavy rainfall. The resulting flash floods are a regular threat to the city’s inhabitants. In addition to this, cyclones also force water from the sea into the drainage channels. Whenever both these phenomena – storms and flash flooding – occur at the same time, the situation becomes highly critical, especially when the masses of waters take people by surprise in their sleep.

### Simple technology

The technology used to give warning of the impending danger is remarkably simple, and can be understood in all corners of the world. Snorkel-type tubes are installed at strategic points in rivers, streams and drainage channels. They contain a ping-pong ball covered with a conductive coating. Whenever water levels rise, the balls also float upwards and, when they reach a certain level, trigger an electrical switch. This in turn sets off alarm sirens, giving the residents time to take themselves and their belongings to a place of safety.

### Local responsibility

The winners of the RISK Award are the IP Consult/Ambero Consult project developers. Together with their partners, the German Agency for International Cooperation (GIZ) and the National Institute for Disaster Management of Mozambique (INGC), they have already begun to set up flood committees in the slum districts. The committee members take real pride in their role and have good community networks. They learn where people can take refuge from the floods and consequently gain a better understanding of the community’s risk situation. During regularly held drills, the committee members are taught how an orderly evacuation should proceed in an emergency situation, and they in turn pass this knowledge on to the city’s inhabitants. The prize money contributes decisively to the committees in Beira being able to fulfil their important tasks.

### Tailored to local requirements

What distinguished the Beira project for the seven members of the RISK Award jury was its inherent simplicity, and the fact that it is easy to replicate elsewhere. It is based on the simplest technology and the inhabitants of the districts at risk can independently operate the system themselves. Not only is the integration of the people at risk (bottom-up) from the very outset a particularly important aspect, but also the fact that the INGC backs the project (top-down) and can contribute experience gained in other cities such as in the capital, Maputo. This broad acceptance at all levels ensures that the Beira project can take advantage of its full potential.

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For further information on this issue:

RISK Award  
[www.risk-award.org](http://www.risk-award.org)

IP Consult  
[www.ip-consult.de](http://www.ip-consult.de)

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## Three questions put to... João Ribeiro, INGC: “The RISK Award gives us a real boost.”



João Ribeiro

is responsible for disaster management in Mozambique. Since 2008, he has headed the National Institute for Disaster Management of Mozambique (INGC) which operates under the Ministry of State Administration.

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For further information  
on this issue:

National Institute for  
Disaster Management INGC  
[www.ingc.4u.co.mz](http://www.ingc.4u.co.mz)

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A happy day for the inhabitants of Beira: the first RISK Award goes to a project for improved early warning against floods. The disaster protection committees of Mozambique were involved in the project from the outset. We spoke to João Ribeiro, Director of Mozambique's National Institute for Disaster Management, after the presentation of the award in Davos.

What does the 2012 RISK Award mean to Beira and for Mozambique?

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It is wonderful to have been chosen as the winner from among so many other promising projects. The INGC, GIZ and IP Consult are long-standing partners. Our aim is to optimise disaster management and establish best-practice examples. We have already acquired two years' experience from our work in other cities, such as Maputo, our capital. The current objective is to establish an easy-to-replicate model in Beira. In other words, we regard the RISK Award as an affirmation of the success of our endeavours. That success gives us a real boost. It is good for risk management in Mozambique as a whole.

Why is disaster management so crucial to your country?

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Mozambique is highly vulnerable to extreme weather events. Some 800 people lost their lives during major flooding in 2000. There have been floods on a number of rivers, and notably the Zambezi, every year since 2007. That sort of frequency was previously unheard of. There are also more and more cyclones today and Mozambique is now hit by a tropical storm almost every year, not to mention the droughts that threaten our food supply. The ideal solution would be a complete overhaul of our national risk management, not least in response to the impact of climate change that is increasingly making itself felt. But that option is precluded by financial constraints. The most viable alternative is to set up as many local committees as possible. This reaches the grass roots level, ensuring the chances of success throughout the country even in hard times.

What do you consider to be the cornerstones of successful risk prevention?

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The main factor is the head of state. Success is only possible if the president has the clear political will to promote risk prevention. Our President, Armando Emílio Guebuza, subscribes to the motto: "Prevention is better than cure". If the relevant institutions and society apply this message in practice, it will be a big step forward. The second factor contributing to success is that the decisions on political frameworks are centralised (top-down) while the decisions on concrete measures are taken locally (bottom-up). In the final analysis, risk management can only succeed if it is an integral part of development policies. Risk prevention is a complementary component of poverty elimination, infrastructure improvements and other objectives. This is an area where we, here in Mozambique, are on the right track.

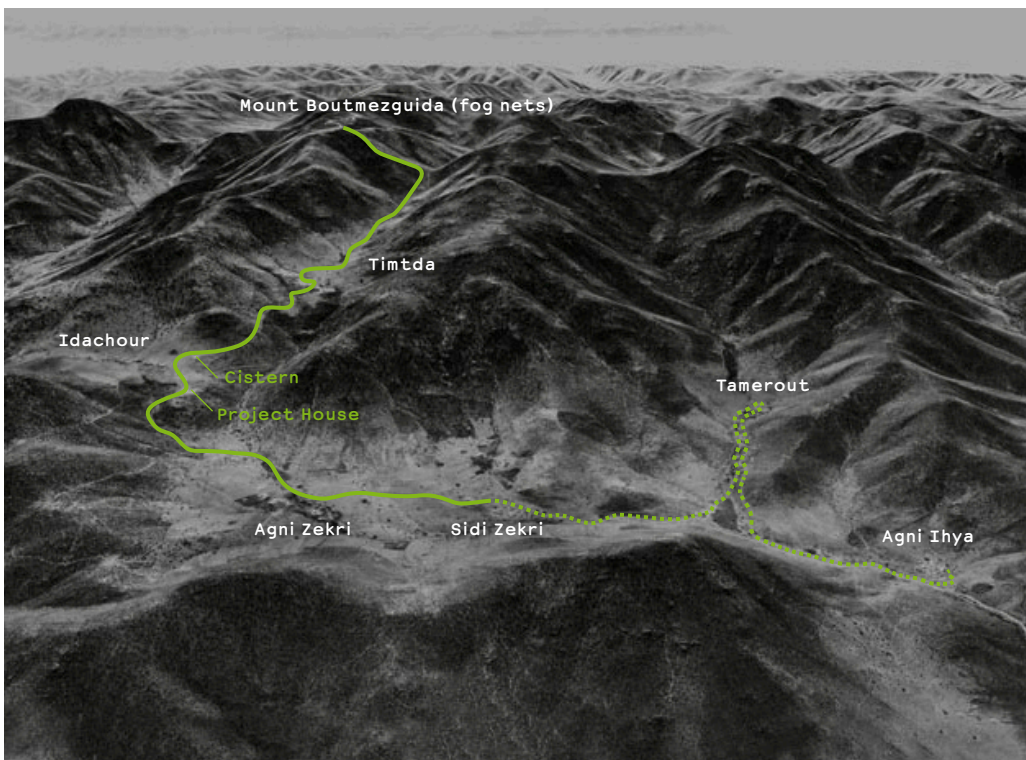
# Fog nets for Morocco — Innovative solutions for local challenges

The Munich Re Foundation has focused its attention on the topic of harvesting drinking water from fog and dew since the beginnings of its work. In 2011, we launched a corresponding project in Morocco. A total of 600 m<sup>2</sup> of fog nets now capture water from the air and soon will supply three villages in the south of Morocco with drinking water via a newly constructed pipeline and storage system.

The idea of harvesting water in arid but fog-intensive regions of the earth is as simple as it is ingenious: build fog nets, install them and let the water flow. However, as so often in reality, the details are of course much more complex, as our project partner, the Dar Si-Hmad organisation, was forced to realise. First of all, the issue of land-use rights in this remote mountainous region in the northwest of the country had to be resolved. This was no simple feat, as the nets were to be installed in a nature reserve in the Boutmezguida region located at an altitude of 1,225 metres. As not all the material required for installation could be obtained in Morocco, import of the unavailable materials also had to be organised, which often involved lengthy negotiations with the customs authorities.

## Meeting the challenges with flexibility and resourcefulness

Apart from the bureaucratic obstacles, several logistic challenges also had to be surmounted. The transport of the building materials to the remote and largely undeveloped region proved to be extremely difficult. Many of the earth roads in the region can only be negotiated with four-wheel drive vehicles – and with the steep slopes and road sections prone to collapse, even that is a dangerous undertaking. This required flexibility: mules were used to transport bulky materials.



## Map of the fog nets in Morocco

A schematic depiction of our fog net project in the Anti-Atlas Mountain Range in Morocco. The green lines mark water pipelines leading from the fog nets to the tanks.

- Installed pipeline
- ... Planned pipeline

Source: Munich Re Foundation, draft 12/2012, basis for map: Google Earth







Above: Clouds of fog creep over the mountain slopes. During the foggy season, the nets can harvest more than 6,000l of drinking water from the humid air daily.

Right: The difficult terrain is often immensely challenging for the project workers. Even four-wheel drive vehicles are taxed to their limits on such paths. When all else failed, an old and traditional means of transportation came to the rescue: the mule.




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For further information on this issue:

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Munich Re Foundation  
[www.munichre-foundation.org/home/Projects/Water](http://www.munichre-foundation.org/home/Projects/Water)

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Dar Si-Hmad  
[www.darsihmad.org](http://www.darsihmad.org)

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In addition to all this, strong mountain winds also made things difficult for the project leaders. By the end of 2011 it had become clear that the originally planned 40 m<sup>2</sup> nets would not be able to withstand the wind pressure. For this reason, Dar Si-Hmad decided to install smaller dual collectors, each offering a surface area of 30 m<sup>2</sup>. Drilling the holes for the numerous installation poles into the hard, rocky ground proved to be exhausting work. Modifications were also required for the water collecting troughs. Instead of plastic, metal was used .

#### Nets alone are not enough

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Autumn 2012: mission accomplished. More than half of the nets with a total surface area of 300 m<sup>2</sup> now stretched skywards from the slopes of the Boutmezguida highlands. Dar Si-Hmad expects the nets to produce an average of 6,300 litres drinking water per day of fog by the end of 2013. The water will first be collected in smaller water reservoirs on the mountainside and then routed to a larger tank in the valley over an almost 7 km pipeline. The tank has been completely overhauled and retiled so that water can be kept in perfect condition for dry, fog-free periods. Further pipelines channel the water in the tank to the three villages of Agni Zekri, Sidi Zekri and Tamerout. At the end of 2012, this final work was undergoing completion and the requisite pipelines were being installed. For testing purposes tons of water were pumped into the system. It worked.

#### Success for all stakeholders

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The delight of the villagers is immense. Due to the tireless efforts of the project leaders, the villagers and external specialists, all the challenges have been met and the common goal reached. The women and girls of the villages in particular will profit from the success of the project. It will save them the once arduous and long trek to collect water.

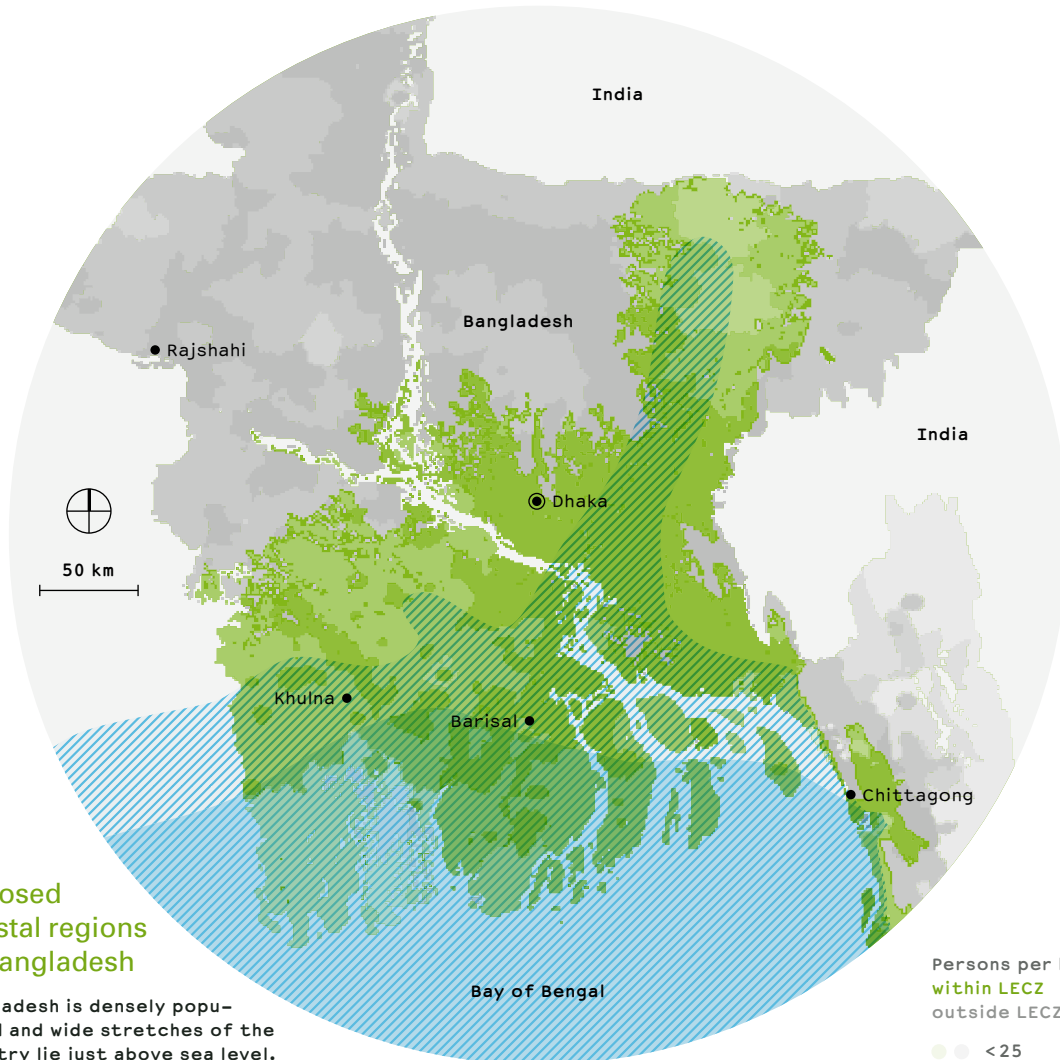


The villages in the enormous Ganges Delta stretching over the south of Bangladesh are often under water. Villagers in the Patuakhali District have learned to live with floodwaters.





# South-South cooperation on adaptation to climate change



## Exposed coastal regions in Bangladesh

Bangladesh is densely populated and wide stretches of the country lie just above sea level. Depending on how strongly the water levels rise, many millions of people will be forced to migrate from ever larger regions.

Source: Munich Re Foundation, draft 12/2012, basis for data: CARE Columbia University (2009)

Potential impact of sea-level rise on Bangladesh

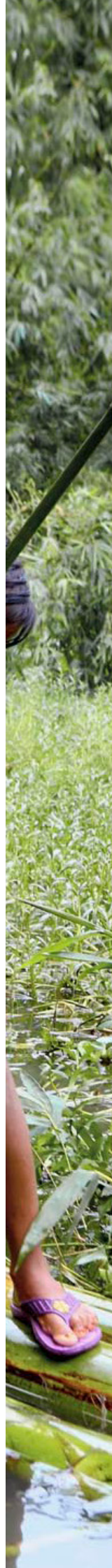
up to 1m  
up to 3m

Persons per km<sup>2</sup>  
within LECZ  
outside LECZ

- <25
- <100
- <250
- <500
- <1000
- >1000

LECZ = Low Evaluation Coastal Zone

The adverse impacts of climate change are already being felt in countries in the developing world in Asia, Africa and Latin America. Some countries are taking the lead in combating those adverse impacts through adaptation. Bangladesh is one of the leading countries in this respect.



As one of the world's least developed countries, Bangladesh is highly vulnerable to a range of adverse impacts of climate change. While much of the country is susceptible to floods, other areas are prone to drought and the low-lying coastal areas to both cyclones and sea-level rise. Though vulnerable, Bangladesh is far from helpless in addressing the impacts of climate change. The government of Bangladesh is one of the first in the world to have developed a far-reaching national climate change strategy and action plan. The Bangladesh Climate Change Strategy and Action Plan (BCCSAP), developed in 2009, is implemented with national financial and technical resources as well as support from the international community.

In addition, the country has put in place disaster reduction and early warning systems, which together have successfully evacuated over two million people during the two major cyclone events – Cyclone Sidr in 2007 and Cyclone Aila in 2009 – that have hit the country within the last few years. Although the damage to crops and infrastructure was still quite severe, the number of lives lost was reduced to a few thousand – compared with over 100,000 lives lost in a similar cyclone in 1991. The reduced loss of life can be attributed to risk reduction measures that include building cyclone shelters, enhancing knowledge of warning systems and developing sophisticated means of disseminating warnings through thousands of Red Cross and NGO volunteers. Bangladesh is famous for its cyclone shelters. These are usually built on pillars and capable of holding thousands of people. When not in use they often serve as community centres and schools. The country has erected 3,000 cyclone shelters, an incredible number. They have tremendously helped to reduce the loss and life from extreme events in coastal areas. Most of the fatalities in the last two cyclones were fishermen at sea who did not get back to shore in time, while over two million people on shore were successfully evacuated to cyclone shelters.

The Bangladesh Climate Change Strategy and Action Plan includes six pillars and over 40 action plans, which are being implemented by both government and non-government organisations. The programme is carried out using two funds. The first fund, to which the Government of Bangladesh has contributed over US\$ 350m, is called the Bangladesh Climate Change Trust Fund. The second fund, the Bangladesh Climate Change Resilience Fund, receives contributions from developed countries such as the United Kingdom, Sweden, Australia, from the European Commission, and from others.

Civil society can play a key role in the development and implementation of climate change strategies. In Bangladesh, civil society is leading the way in the development of adaptation strategies. Initiatives range from those that help empower the most vulnerable groups in society to devise their own adaptation strategies to those that assist communities in diversifying agricultural activities and procuring livestock to increase their income and reduce their vulnerability to droughts and floods.

### South-South learning is the key

Bangladesh is promoting South-South learning on adaptation to climate change between Asia and Africa by sharing its experience with other developing countries. In many ways Bangladesh is providing a blueprint for other developing countries. Work on monitoring and evaluating community-based adaptation has started to attract the attention of NGOs in Africa, who are looking for a way to monitor and evaluate their own adaptation projects.

Another platform for South-South cooperation is the recently established International Centre for Climate Change and Development (ICCCAD). Hosted at the Independent University, Bangladesh (IUB), ICCAD is a joint venture between the London-based International Institute for Environment and Development, the Bangladesh Centre for Advanced Studies and IUB. The institute has already delivered a series of training courses for professionals from Asia and Africa on various aspects related to climate change adaptation. ICCAD currently has over 200 alumni from over 30 countries throughout Asia and Africa.

In the future, all countries, both developing and developed, will increasingly have to face the adverse impacts of climate change. Thus, South-North as well as South-South cooperation and exchange should be increasingly employed, as many of the rich countries can also learn lessons from Bangladesh.

For further information on this issue:  
[centers.iub.edu.bd/icccad](http://centers.iub.edu.bd/icccad)



### Saleemul Huq

is a Senior Fellow at the International Institute for Environment and Development (IIED) in London. The expert for climate change and development is also Director of the International Centre for Climate Change and Development (ICCCAD) in Dhaka, Bangladesh.



Necessity is the mother of invention: children on the Brahmaputra River travel to school on a simple raft. During monsoon season, it is the only way of arriving in class with comparatively dry feet.







Disaster prevention

## Flood protection in Bangladesh — The launch of a new foundation project

Bangladesh regularly experiences setbacks from weather disasters. Scientists are predicting an increase in risks, one reason more for the Munich Re Foundation to invest in a new flood warning project for communities at risk. Elements of the foundation's successful warning system in Mozambique will be applied.

Bangladesh is a fascinating country. Over 160 million people, more than half of whom are not even 20 years old, live in an area less than half the size of Germany. The country at the confluence of the Ganges, Brahmaputra and Meghna Rivers ranks 147th of 187 on the Human Development Index, making it one of the poorest countries in the world. Climate change is likely to exacerbate the situation.

Already today, floods and storm surges are repeated setbacks to development in the predominantly agricultural country. In the autumn of 2007, Cyclone Sidr left a trail of devastation in its wake. A total of 3,450 people lost their lives, 775,000 houses were damaged, livestock and poultry perished. Even in quite normal years, extensive areas of the country along the rivers are inundated; the inhabitants have learned to cope with the situation. Flood shelters and elevated buildings offer a degree of safety, even in cases of extreme flooding. However, when thawed snow and ice from the Himalayas coincides with heavy precipitation, these precautionary measures often do not suffice. A change in monsoon patterns can also trigger heavy floods and take people by surprise before they are able to bring their harvests into safety.



Rising sea levels pose a further threat to the south of the country. The water level is climbing 3.2 mm per year, quicker than predicted by the International Panel on Climate Change (IPCC) in 2007. The forecasts at that time already anticipated that Bangladesh would lose nearly 20% of its land surface by 2050. This will cause some 20 million Bangladeshi to become climate refugees and create shortfalls in food production of approximately 30%.

#### The new project – Winners all round

To help the people at risk, the Munich Re Foundation is working to establish a flood warning system. To this end, the foundation has launched a multi-year research and field project in collaboration with the UN University in Bonn and the International Centre for Climate Change and Development (ICCCAD), an institute of the Independent University (IUB) in the capital city of Dhaka. Migration will also play a crucial role. ICCCAD Director is Saleemul Huq, who for decades has been campaigning for improvements in the least developed nations of the world.

The goal is to establish an early warning system for floods in several communities by integrating the people at risk. The project is a win-win situation for all: for the ICCCAD it offers the opportunity of networking research in its own country with that of western nations. To this end, a Resilience Academy will be held each year in autumn, alternately in Bangladesh and Germany, and will bring researchers and practitioners from the North and South together. The UN University in turn will benefit from the impulses provided by a new partner. Research on resilience, migration and other important relationships in developing countries is best conducted directly on site. The foundation will be given the opportunity to prove that the flood warning system tailored to Mozambique can also work elsewhere. For this reason, as many elements of that system as possible should also be applied in Bangladesh. However, the most important thing is that the people along the rivers and coasts will be given the chance to bring themselves and their harvests into safety when flash floods strike.

**Left:** This house in Brahmaputra can only be reached by boat during the rainy season. The huge pile of hay serves for the provision of livestock in the barn behind the house.

**Right:** The flood shelter on the banks of the Brahmaputra near Sinojgonj to the north of Dhaka bears witness to the severe risk of flooding. Under normal circumstances it houses a primary school. During heavy flooding, the building offers villagers refuge.

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For further information on this issue:

International Centre for Climate Change and Development  
<http://centers.iub.edu.bd/icccad>

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# Mozambique flood warning — Project conclusion after successful handover

NÍVEIS DE ALERTA:  
DOMBE ⇒ 5.5 m  
Goondá ⇒ 5.5 m  
Grudja ⇒ 5.5 m

From 2005 to 2012, the Munich Re Foundation and its partners set up several flood-warning systems in Mozambique. By now, they are well established and operate reliably when storms and floods occur. The final step in concluding the project is to hand over responsibility for the operation to the local authorities.

Since 2005, we and our partners, the German Agency for International Cooperation (GIZ), and IP Consult have installed flood warning systems in the province of Sofala, in central Mozambique. Many communities along the Búzi, Save and Revuè rivers are now prepared to deal with floods. As soon as an alert sounds, people can seek shelter, together with their belongings. A large-scale annual practice drill is held before the rainy season sets in during autumn, to test the various components that make up the warning systems. These trial runs and mock evacuations are carried out to refresh the villagers' know-how. Now that the systems have been shown to work on numerous occasions, important steps were taken in the course of 2012 to completely hand responsibility for running them over to the national authorities.

#### Ownership workshops

The regularly held autumn practice drills are already an established part of the annual planning of Mozambique's National Institute for Disaster Management, INGC. For the continued success of the flood warning systems, it is also essential that local officials in the districts that border the rivers can be relied upon to oversee the relevant activities (communication, training and maintenance) throughout the year. Political expert and lawyer Oscar Monteiro was tasked to create a legal framework for this purpose. The former Minister for Administration of Mozambique is a highly respected politician. He has drafted a regulation, which states the responsibilities of the communities along the rivers.

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For further information  
on this issue:

Munich Re Foundation  
[www.munichre-  
foundation.org/home/  
Projects/  
DisasterPrevention](http://www.munichre-foundation.org/home/Projects/DisasterPrevention)

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Left above: The Búzi River in Sofala is pivotal to our flood warning system in Central Mozambique.

Left below: Oscar Monteiro, former Minister of Administration in Mozambique, is a well-respected lawyer. Within the framework of our project he drafted a law for regulation of flood risk management. Its goal is to create a solid institutionalised framework for the flood warning system.

Right: Wheelbarrows, spades and flags are some of the most important tools used by the water committee. Yellow, blue and red signalise the levels of flood danger. Flags of the respective colour are hoisted in an emergency situation and trigger preventative measures.

The question of ownership and the current status of the flood warning system were the main items on the agenda of a conference held at Búzi on 20 March 2012. The conference was attended both by administrators from Save, Búzi and Revuè as well as representatives from the north of the country, where warning committees have also been established as part of a drive to improve flood loss management. One of the key issues discussed was who should assume leadership with delegatory authority during a crisis, an issue that would be redundant if a flood warning centre existed. Negotiations on this very subject are currently being conducted in Mozambique.

The conclusion of the discussions in Búzi is the following: A few parts of the planned regulation still need their finishing touches but overall the legal process of setting up the requisite institutions has made a great step forward.

Flood warning systems are thus becoming more and more embedded in society. Responsibility now largely lies with the people of Mozambique and their political representatives. The idea of flood warning committees is setting a precedent and has been adopted as a strategic element in disaster prevention throughout the country. The positive experiences of the past years and the smooth handover of the flood warning systems make us confident of the continuing sustainable conduct of the projects that the foundation has promoted.

### Improved data collection and transmission

Cologne University ran a large-scale project to optimise data capture and transmission quality, key elements of the warning system. Jackson Roehrig and students from the FH Institute for Technology and Resources Management in the Tropics and Subtropics (ITT) set up automated gauging stations to record and transmit key weather parameters and river level readings. The data can be used for disaster management, agriculture and water management, as well as infrastructure planning. Gauges that can easily be serviced by locals make day-to-day life easier. However, data continues to be collected manually, not just to forestall technical issues but primarily because the daily personal involvement in the collection process fosters the identification with the project and thus ownership.



Left: Alarm drill prior to monsoon: the yellow rope plays a central role. When floods strike, it provides orientation and ensures orderly evacuation.

Above: At the Maputo Climate Change Adaptation Meeting, representatives from ten countries in the southern latitudes and international experts discussed how adaptation to climate change can succeed. The focus was on what measures can be used to deal with the increasing droughts and floods.

Disaster prevention

## Local water committees — A model for other countries

The flood warning system in Mozambique is a component that helps protect the country against the effects of climate change. The importance of locally organised risk management became clear during a climate conference in Maputo in October.

“Hold on tight to the yellow rope!” cries the official in charge of evacuation: “But why?” asks a small boy, “It looks so silly!”. “It might look silly now”, answers the man in uniform, “but in a flood people get confused, and we need these rules so that no one drowns.” We are in Mozambique, observing an autumn drill intended to prepare the inhabitants for flood disasters. It is just one of many exercises organised by the local water committee.

The flood warning systems in Mozambique and other examples of adaptation to climate change were the central issues at the Maputo Climate Change Adaptation Meeting that took place from 25 to 28 October 2012. Together with our partners, the German Agency for International Cooperation (GIZ), and IP Consult, we invited specialists and politicians from Southern Africa and Central America to attend. The conference was organised by the Coordinating Council of Disaster Management (CCGC), the National Institute for Disaster Management of Mozambique (INGC), and the Ministry of the Environment of Mozambique (MICOA).

Minister of the Environment, Alcinda Abreu, believes the country to be on the right track with its risk management, despite the growing risks. At the conference, INGC director João Ribeiro praised in particular the local water committees. Approximately 4,000 of these committees are needed across the entire country, but at the moment there are just 60. The development of these groups is of key importance to Ribeiro, as local task forces can be set up at comparatively low cost.

The conference participants from Southern Africa and Central America together with representatives from the World Meteorological Organization (WMO), and the United Nations were impressed at how disaster prevention can be organised successfully at local level with such moderate means as in Mozambique. It is a win-win strategy where local inhabitants, who know their own risks best and often have developed good, tailored strategies, are involved. Assigned with such responsibility, their self-confidence and risk awareness increases. Prerequisite for their functioning are stable political conditions. Given such conditions, success stories of locally managed measures are also possible elsewhere.



## Interview with Jackson Roehrig and Daniela Kaempfe — Better data for Mozambique



Jackson Roehrig and Daniela Kaempfe

Jackson Roehrig and his student Daniela Kaempfe from the Institute for Technology and Resource Management in the Tropics and South Tropics (ITT) at the University of Cologne investigate optimisation of technical solutions. They are carrying out research in Mozambique. Numerous theses on the most far-ranging aspects of disaster prevention and management have already been completed. Roehrig plans to build low-cost automated monitoring stations to collect meteorological and hydrological data.

Prof. Jackson Roehrig of the Institute for Technology and Resources Management in the Tropics and Subtropics (ITT) at Cologne University of Applied Sciences is researching various aspects of Mozambique's flood warning system. The main objective is to substantially improve the collection and transmission of river basin data using automatic gauging systems. We met the Cologne-based professor and his student Daniela Kaempfe at the Búzi flood warning system.

Prof. Roehrig, you want to see better automatic gauging systems. Why Mozambique?

Roehrig: Mozambique suffers severe natural catastrophes, including floods and droughts. Recording of climate and water data was virtually non-existent during the civil war which lasted into the 90s. But such data are used for land and water management, infrastructure planning and disaster management. The technical appliances currently purchased abroad are too expensive and sophisticated. We are looking for cost-effective solutions.

Can you give us an example?

Roehrig: Climate stations with automatic data transmission capability of the type used here cost around €1,000 to purchase, install and commission. Mozambique's meteorological service pays more than €170,000 for just one station. That's ridiculous. We're talking big numbers here. Because of the technical complexity and cost, these stations can at most be operated in the few major cities on the coast. Mozambique's entire hinterland to the west, where the floods come from, and where drought wreaks havoc, is not covered by the system.

Kaempfe: Our stations have to be simple and robust to ensure they are weather-resistant during the rainy and stormy seasons. Another issue is that Mozambique's radio network is far from stable. We use the national providers' mobile phone network to transmit data by SMS or GPRS. And last but not least, we also have to guard against theft. Just recently, a solar panel fixed to a transmitter was stolen.

How about the early warning system: what advantages does it offer?

Roehrig: Because data are transmitted at ten-minute intervals, the stations can be used for emergency planning in the event of heavy rainfall and floods. But the equipment has a far greater capability, and we record not only basics like temperature and rainfall but also evaporation data and other meteorological parameters vital to agriculture. The result is better crop management during droughts.

And what are the biggest challenges?

Roehrig: There are hardly any major issues as far as the equipment and our local partners are concerned but you need a lot of patience to deal with the bureaucracy and long-winded procedures. It takes time to get things done here, and that's not something you're used to if you come from Germany.

Can you use the experience you've gained in Mozambique elsewhere?

Roehrig: Definitely. There's a huge demand for sturdy, cost-efficient gauging stations. Our telemetric gauges are used by a water agency in North Rhine-Westphalia on the border with the Netherlands. In that respect, the expertise we invest in Mozambique is returned to Germany.

# Virtual Academy – Studying sustainability online



Remote learning: the Virtual Academy offers students access day and night to knowledge relating to the concept of sustainability. The universities also profit from the academy, which allows them to integrate the individual modules into their curricula.

Students from all disciplines should be given the opportunity at their universities to acquire competencies in building a sustainable society. This is one of the goals set by the UN Decade of Education for Sustainable Development (DESD), 2005–2014. The Virtual Academy, an internet-based education platform of the University of Bremen, helps universities in Germany to embed the subject of sustainability more firmly into their curricula. The Munich Re Foundation supports this project.

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For further information  
on this issue:

Virtual Academy of  
Sustainability  
[www.va-bne.de](http://www.va-bne.de)

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Education for sustainable development heightens the awareness of children, young people and adults, teaching them to think and act for a sustainable future. It allows people to assess how their own activities not only impact our environment today but also affect future generations and other regions of the world.

To facilitate the incorporation of the concept of sustainability into education systems worldwide, the United Nations have proclaimed the years 2005 to 2014 as the Decade of Education for Sustainable Development. The programme addresses people at all stages of life – not just pupils and students. Its main principle is lifelong learning. The goal of the Decade is to promote prospective thinking, autonomous action and participation in social decision-making processes.

## E-learning – An approach for the future

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The University of Bremen has now created an education platform that is not only innovative but also groundbreaking in Germany: the Virtual Academy of Sustainability. The idea was inspired and supported by leading experts in the field of vulnerability research: Uwe Schneidewind (Wuppertal Institute), Gerd Michelsen (Leuphana University) and Georg Müller-Christ (University of Bremen). Students have round-the-clock access to electronic and video-based courses via the internet. With its support of the Virtual Academy, the Munich Re Foundation has added to its existing sponsorship of primary school education in Munich (see page 54) a German-wide university-level project.



The attractiveness of the academy will stand or fall with the quality and relevance of its curriculum. In this respect, the programme already has a lot to offer. Renowned institutions such as the Wuppertal Institute, the Potsdam Institute for Climate Research (PIK) and the German Advisory Council on Global Change (WBGU) have contributed complete learning modules. The course offered by the WBGU, for example, addresses the question of how a “major transformation of society”, one that leads it away from fossil fuels, can be managed. The PIK module focuses on diverse strategies for climate protection and adaptation. Standard packages such as “Nachhaltigkeit und BWL” (sustainability and business economics) summarise the current sustainable business study programmes and provide practical insights into the discipline; the “Nachhaltigkeit und Unternehmensführung” (sustainability and corporate governance) module explains how companies can act sustainably and presents potential concrete instruments for sustainable resources management (for a selection of Virtual Academy modules, see right column).

Several universities in Germany use the courses offered by the Virtual Academy in their general studies programmes or to supplement their own sustainability-related areas of studies. In some cases, up to six credit points prescribed for the study programme can be earned and acknowledged by the students’ home institutions. In the summer semester of 2012, the examination process was tested at two universities (University of Kassel and University of Fulda).

#### Flexibility is a decisive advantage

The Virtual Academy allows the students to decide themselves when, where and how fast they wish to complete the modules and also repeat them at their discretion. Online consultations and inter-student networking for exchanging information and clarifying questions round off the programme. The universities also benefit. They combine innovative, multimedia courses with new examination methods, thus making it possible to combine studying with family life. They also benefit from being able to enhance their own curricula with the expertise of leading institutions. Last but not least, universities also accept social responsibility by contributing towards the achievement of the goal of the UN Decade of Education for Sustainable Development.

## Virtual Academy Overview of some of the modules offered



### Education for sustainable development Free University of Berlin

The focus of this course is on teaching students about the concept of sustainable thinking and action, and on approaches to dealing with the associated complex problems. The focus is on the presentation of theoretical principles of the sustainability concept, as well as the discussion of the practical relevance of sustainability.



### Sustainability and corporate governance University of Bremen

How can companies act sustainably? Answers to this question are provided by the learning module created by Prof. Georg Müller-Christ. It demonstrates the relevance of sustainable thinking and action in politics and industry and develops concepts for the resolution of contradictions between economic, social and ecological aspects within the company. Moreover, concrete instruments for sustainable resource management are presented.



### Climate protection and climate adaptation Universities of Bremen

This learning module delves into the fundamental questions of climate protection and puts forward potential political strategies for climate adaptation from interdisciplinary perspectives. Wide-ranging aspects of this subject such as climate change and its impacts on the different systems, international climate policies, environmental protection issues as well as the relevance of climate protection in daily life, are addressed.



### Transition management Wuppertal Institute for Climate, Environment, Energy

Given the depletion of natural resources, this educational video addresses the question of how prosperity can be disengaged from the consumption of resources. It examines how fundamental transitions in politics, culture and practice can be shaped based on the latest research findings on the subject of transition management. The future appearance of big cities and the change within various industries are specifically addressed.



### World in transition: A global contract for sustainability German Advisory Council on Global Change (WBGU)

Based on the flagship report, “World in Transition – A Social Contract for Sustainability”, published by the WBGU, this module, held in English, highlights the necessity of a post-fossil economy and, building on this, outlines the feasibility of a transition to sustainability. The module focuses on the subjects of energy, land use and urbanisation.



Pupils at the Montessori School in Balanstrasse admire a mirrored solar cooker in the “Sun-Full of Energy” educational module. Within just a few minutes, the water begins to boil.

Report

## Munich Energy School — In enthusiastic pursuit of greater sustainability

The energy revolution, a subject which is increasingly dominating public debate in Germany, has long been the driving force behind the work of Green City e.V. With its Munich Energy School project, the Munich-based association introduces the young generation to subjects such as energy conservation, alternative energies and climate protection through play. The Munich Re Foundation funded further workshops at primary and secondary schools in 2012.

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For further information on this issue:

Green City e.V.  
[www.greencity.de](http://www.greencity.de)

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The young researchers are highly enthusiastic. In the interactive “Sun-Full of Energy” workshop geared to pupils from grades one to seven, they not only learn how to conserve energy but also about the contribution that alternative energy resources can make to climate protection. Instead of just dry theory, interactive participation is called for: the girls and boys use solar stoves to investigate how much energy the sun produces, they build their own solar modules and set out in search of energy hogs armed with electricity consumption meters. Some 400 pupils at the elementary schools on Munich’s Gotzinger Platz and Haimhauser Strasse took part in the workshops in 2012.

Green City’s “Energy for the Future” workshop is directed at seventh- and eighth-grade pupils at secondary schools. It also addresses the subject of careers in the renewables sector to help young people find their preferred field. In March 2012, the module was introduced to the curriculum of the secondary school on Inzeller Weg in Munich with our backing. The third component offered by the Energy School comprises the “Joulz” packages that provide schools with a wide variety of teaching material on renewable energies. In 2012, with our assistance, the Blütenburg secondary school was equipped with the package for the fifth to ninth grades.

Sustainability and climate protection play an increasingly important role for coming generations. Enthusiastic young people are more easily motivated to live with greater ecological sensitivity and initiate sustainable changes in their daily lives. For this reason, we will continue to support the Munich Energy School – for a future worth living.

“I was awed by the thermographic images because you can see where the heat leaks in the school building are. The project was great fun.”

Christina

“I find the contact with Green City, the trade guilds and the companies very good because of the professional perspectives and opportunities it opens up.”

Valentina

“I wish we could have more of these projects because we would become aware of what we’re doing wrong.”

Steven



## Further activities — Project news



### Donations for the Horn of Africa – Final balance

One of the hottest places on earth lies in Erebti, Ethiopia. Daytime temperatures of over 50°C are not uncommon. The year 2011 brought double disaster to the district: a severe drought exacerbated water scarcity while erupting volcanoes caused heavy contamination of the wells. The Munich Re Foundation acted quickly, together with arche noVa, a partner of Aktion Deutschland Hilft. Thousands of water purification tablets were distributed to the people. Four existing wells were restored to use and a new well built. Approximately 12,000 people have benefited from the measure. Health and hygiene information measures have reached 16,000 people. Today we can confirm that access to clean drinking water has been sustainably improved. Distances to water points are now shorter, and many children can attend school again – one of the most elementary prerequisites for important further development steps in this region.

### First German Microinsurance Research Workshop

The interest of science in microinsurances has increased greatly in recent years. Does microinsurance influence child labour? Does it improve health-care? Are there any effects on existing solidarity systems to be observed? These and other methodological questions were discussed by some 30 PhD students and young researchers during the Microinsurance Research Workshop in Mannheim on 7 December 2012. The event was organised by dedicated doctoral and post-doctoral candidates from German universities at the institute of the University of Mannheim headed by Prof. Frölich and by the Munich Re Foundation.

[froelich.vwl.uni-mannheim.de/2241.0.html](http://froelich.vwl.uni-mannheim.de/2241.0.html)



### The foundation at the World Climate Conference in Doha

The policy paper “Addressing Loss and Damage” that we drew up in October 2012, during our last alumni conference in Bonn (Keystone Conference, see page 10), was presented at the 18th World Climate Summit (COP 18) in Doha in December. The issue that social vulnerability and its interdependency in loss assessments are too often neglected attracted widespread interest. Koko Warner, UN University Bonn, Saleemul Huq from Bangladesh and Thomas Loster from the Munich Re Foundation explained the policy paper to the press at the climate conference.



### “The Microinsurance Landscape in Latin America and the Caribbean”

In October 2012, a market study published by the Inter-American Development Bank (IDB) on microinsurance in Latin America and the Caribbean closed an important gap. The study was compiled by the Microinsurance Centre with the support of the IDB, the Citi Foundation and the Munich Re Foundation. Comprehensive market data on providers, availability, growth drivers and the challenges in this segment had formerly only been provided by older studies from 2007 and by the latest study on microinsurance in Africa (see page 13). The new study again confirms the high growth rates worldwide. The most important insight: on average, microinsurances already account for 20% of the portfolios of the insurance providers surveyed.

[www.microinsurancelandscape.org](http://www.microinsurancelandscape.org)

### A change for the good: Cooperatives and microfinancing

For the North-South relation, cooperatives are important players. During a conference held from 7–9 December 2012, the Evangelische Akademie in Tutzing with support from the Munich Re Foundation explored contributions made by cooperatives to an accountable and sustainable economy and lifestyle. Thomas Loster held a presentation on experiences gained in the world of microinsurance.

# Carbon sequestration through reforestation



Many of our projects are aimed at reducing potential damage and losses for people at risk. At the same time, our business activities generate greenhouse gases. To achieve a holistic approach to climate protection, we calculate our CO<sub>2</sub> emissions each year and compensate for them by purchasing certificates from climate protection projects.

In 2012 the work of the foundation caused 1,570 t of CO<sub>2</sub> emissions. That makes 130 t less than in 2011. A small percentage (98 t CO<sub>2</sub>) was generated by business trips and the foundation's office activities (heating and electricity). These emissions will be offset by Munich Re. However, the main proportion of the emissions was attributable to international seminars, workshops and conferences (1,472 t CO<sub>2</sub>). Of these, the Micro-insurance Conference accounted for the largest volume of emissions. The participants, almost 600, who largely travelled by air from all over the world, generated 1,290 t of CO<sub>2</sub> emissions.

In 2012 we decided to purchase CO<sub>2</sub> certificates from a project in the Sofala province of Mozambique. In cooperation with the provincial government, the Gorongosa National Park and the Nhambita community, Envirotrade Ltd. is managing a forestry and reforestation programme in this province. The goal of the project is to reclaim the strongly degraded forests for renewed utilisation, to preserve sustainable habitats and to promote biodiversity. The reforestation measures lead to the capture and storage of CO<sub>2</sub>, as the growing trees absorb carbon (C) through photosynthesis while releasing oxygen (O<sub>2</sub>) back into the environment.

With its surface area of 11,744 hectares, the project has an annual CO<sub>2</sub> reduction potential of approximately 100,000 t. In addition to this, social improvements in the local community can also be achieved. The sale of emission reduction certificates is a regular source of income for the local population. The additional funds also make it possible to provide special education schemes for women thus promoting greater gender equality.

A farmer in Sofala plants a tree as part of the reforestation programme. The programme is also financed by the purchase of CO<sub>2</sub> certificates.



The Munich Re Foundation compensates for work-related CO<sub>2</sub> emissions, even those generated by conference participants. The 2012 emissions were lower than in 2011, due mainly to the fact that the International Micro-insurance Conference was held in Tanzania (the previous year in Rio de Janeiro). Despite the larger number of guests, significantly fewer miles flown made a difference.



Source: Munich Re Foundation, 2012

For further information on this issue:

ClimatePartner  
[www.climatepartner.com](http://www.climatepartner.com)

Munich Re Foundation  
[www.munichre-foundation.org/home/About-us/Environmental](http://www.munichre-foundation.org/home/About-us/Environmental)



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**Dirk Reinhard**  
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### Committees

Members of the Munich Re Foundation's staff are active on a number of committees. The main ones are listed below:

Climate Change, Environment and Migration Alliance (CEMA), Geneva (Steering Committee member)

Microinsurance Network, Luxembourg (Board of Directors member)

Munich Climate Insurance Initiative (MCII), Bonn (Executive Board member)

Siemens Stiftung, empowering people.Award, Munich (Jury member)

UN Decade of Education for Sustainable Development, Bonn (National Committee member)

UNISDR, Private Sector Advisory Group (PSAG), Geneva (Board member)

UNISDR, Post-HFA Advisory Group, Geneva (Board member)

D+C Development and cooperation journal published by the German Federal Ministry for Economic Cooperation and Development, Berlin (Advisory Board member)



From left to right:  
Christian Barthelt, Angelika Boos,  
Martina Mayerhofer, Paula Jiménez,  
Thomas Loster und Dirk Reinhard.

Own publications

2011 report

Date of publication  
03/2012  
Order numbers  
German: 302-07331  
English: 302-07332

7th International  
Microinsurance  
Conference 2011  
Making insurance work  
for the poor

Date of publication  
04/2012  
Order number  
English: 302-07441

Positionen  
Dialogforen 2012  
Macht und Einfluss:  
Wer bestimmt  
die Geschichte der Welt?

Date of publication  
09/2012  
Order number  
German: 302-07575

Publications with  
project partners

Protecting the poor  
A microinsurance  
compendium, Volume II

Date of publication  
04/2012  
Order number  
English: 302-07392

Climate Change, Justice  
and Sustainability –  
Linking Climate and  
Development Policy

Date of publication  
06/2012  
ISBN 978-94-007-4539-1

Conference report  
International Micro-  
insurance Conference –  
Learning Sessions Ghana

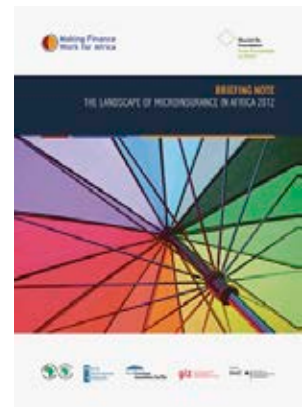
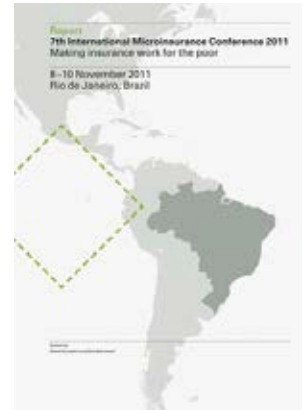
Date of publication  
07/2012

The landscape of  
microinsurance in Latin  
America and the Caribbean –  
A briefing note

Date of publication  
10/2012

The landscape of  
microinsurance in Africa –  
A briefing note

Date of publication  
12/2012  
Order number  
English: 302-07724



Further information:

[www.munichre-foundation.org/home/Publications](http://www.munichre-foundation.org/home/Publications)





We supported the UNU-EHS chair on social vulnerability in Bonn from 2005 to 2012. Numerous publications evolved. An overview is provided here:

**SOURCE**

2012  
Prof. Mohamed Hamza, Dr. Cosmin Corendea  
Climate Change and Fragile States: Rethinking Adaptation

2011  
Prof. Michelle Leighton, Dr. Xiaomeng Shen, Dr. Koko Warner  
Climate Change and Migration: Rethinking Policies for Adaptation and Disaster Risk Reduction

2010  
Dr. Xiaomeng Shen, Prof. Thomas E. Downing, Prof. Mohamed Hamza  
Tipping Points in Humanitarian Crisis: From Hot Spots to Hot Systems

2009  
Prof. Anthony Oliver-Smith, Dr. Xiaomeng Shen  
Linking Environmental Change, Migration and Social Vulnerability

2008  
Prof. Hans Georg Bohle, Dr. Koko Warner  
Megacities – Resilience and Social Vulnerability

2008  
Prof. Ursula Oswald Spring  
Gender and Disasters – Human, Gender and Environmental Security: A HUGE Challenge

2007  
Dr. Koko Warner  
Perspectives on Social Vulnerability

**InterSecTions**

2012  
Dr. Cosmin Corendea, Dr. Koko Warner, Kristina Yuzva  
Social Vulnerability and Adaptation in Fragile States

2011  
Prof. Michelle Leighton  
Climate Change and Social Vulnerability: Improving Global Protection of Forced Migrants and Displaced Persons

2009  
Prof. Anthony Oliver-Smith  
Nature, Society and Population Displacement – Toward an Understanding of Environmental Migration and Social Vulnerability

2009  
Prof. Anthony Oliver-Smith  
Sea-level Rise and the Vulnerability of Coastal Peoples – Responding to the Local Challenges of Global Climate Change in the 21st Century

2007  
Prof. Hans Georg Bohle  
Living with Vulnerability – Livelihoods and Human Security in Risky Environments

**Research and Policy Briefs**

2012  
Prof. Anthony Oliver-Smith, Prof. Susan L. Cutter, Dr. Koko Warner, Dr. Cosmin Corendea, Kristina Yuzva  
Addressing Loss and Damage in the Context of Social Vulnerability and Resilience

2011  
Prof. Michelle Leighton, Dr. Xiaomeng Shen, Dr. Koko Warner, Michael Zissener, Hannah Smith, Andrea Berringer  
Policy and Institutional Mechanisms to Address the Needs of Climate-Related Migrants

2009  
Marc Stal, Dr. Koko Warner  
CEEMA Second Policy and Research Workshop: The Way Forward – Researching the Environment and Migration Nexus

2009  
Carsten Butsch, Benjamin Etzold, Patrick Sakdapolrak  
The Megacity Resilience Framework

2009  
David Wrathall, Benjamin Morris  
Confronting Environmental Migration – A Framework for Research, Policy and Practice



# Current projects 2012



## Chair on Social Vulnerability at the Institute for Environment and Human Security, United Nations University (UNU-EHS)

Project partner:  
UNU-EHS, Bonn

From 2005 to 2012, the Chair on Social Vulnerability we established in Bonn researched social vulnerability of communities and how their resilience can be boosted. Development cooperation must be geared to people's needs. Our research enhanced our work in the field and served as a basis for policy making. In October 2012, we concluded the project with a final, major conference in Bonn.

Page 6 and 10

## Seventh Summer Academy: "From social vulnerability to resilience"

Project partner:  
UNU-EHS, Bonn

Every year we have invited 20 young international scientists and renowned experts to Schloss Hohenkammer, near Munich, to discuss possible solutions to global challenges. The Chair on Social Vulnerability at the UN University in Bonn coordinated the academic programme of the Summer Academy that was conducted from 2006 to 2012. The last Summer Academy was held in July 2012.

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## Virtual Academy of Sustainability

Project partner:  
University of Bremen

The Virtual Academy is an internet-based learning platform of the University of Bremen that helps universities in Germany to embed the subject of sustainability more firmly into their curricula. Students can access electronic and video-based courses via the internet any time to familiarise themselves with the concept of sustainability and its potential. The universities use the courses offered by the Virtual Academy in their general studies programmes or to supplement their own sustainability-related courses. The Munich Re Foundation has been funding this innovative concept since 2012.

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## Education projects in Munich

Project partners:  
Munich University of Applied Sciences and Green City e.V., Munich

One of the foundation's aims is to pass on its knowledge to pupils and young students. On the one hand, the topics of the foundation determine the content of a seminar named "Climate, water, energy – Managing global challenges sustainably" that we have been holding at the Munich University of Applied Sciences since 2010. On the other, we support the Energy School Munich, which seeks to introduce elementary and secondary school pupils to the world of energy efficiency, climate protection, sustainability and similar fields using a fun, hands-on approach.

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Munich Re Foundation,  
basis for map: "Landscape  
of microinsurance in Africa"  
(2012), MFW4A and  
Munich Re Foundation  
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Munich Re Foundation,  
own blueprint 12/2012  
Page 36

Munich Re Foundation,  
own blueprint 12/2012,  
basis for map: Google Earth  
Page 40

Munich Re Foundation,  
own blueprint 12/2012,  
basis for data: CARE Columbia  
University (2009)  
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GIZ-Ghana, Promoting Micro-  
insurance in Ghana (ProMIGH)  
Thomas Loster, Munich Re  
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Oliver Jung, Munich  
Munich Re Foundation archives  
Inside front cover

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Munich Re Foundation  
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Oliver Jung, Munich  
Green City e.V.,  
Munich Re Foundation archives  
Thomas Loster, Munich Re  
Foundation  
Dar Si-Hmad, Morocco  
Inside back cover

Preview of 2013

**29 January**

Dialogue forum "Transformation –  
Ways forward"

**21 February**

Dialogue forum "Higher,  
faster, further – Mobile  
amidst traffic chaos?"

**19 March**

Dialogue forum "Will climate  
change get the better of us –  
Or can we beat it?"

**4 April**

Start of the summer term at  
the University of Applied Sciences,  
Munich "Seminar on Sustainability"

**9 April**

Dialogue forum "Yes to renewable –  
But not in my backyard!"

**14 May**

Dialogue forum "Social mobility –  
Hamster wheel or new-found  
freedom?"

**23 May**

Announcement subject  
2014 RISK Award at the Global  
Platform for Disaster Risk Reduction

**September**

1st Summer Academy discussing  
"Building Resilience in Bangladesh"

**September**

Start of the winter semester at  
the University of Applied Sciences,  
Munich "Seminar on Sustainability"

**12–14 November**

9th International Microinsurance  
Conference in Jakarta, Indonesia



### International Microinsurance Conference and "Learning Sessions"

Project partner:  
Microinsurance Network,  
GIZ and CEAR

The International Microinsurance Conference offers representatives from supervisory authorities, donor organisations, the insurance industry, the scientific community and practitioners a forum for sharing knowledge and networking. The conference has been held since 2005, every year on a different continent. The aim of the platform is to tackle poverty and create a basis for improving the living conditions of people in developing countries. Furthermore, we organise tailor-made "Learning Sessions" in different countries with microinsurance potential.

Page 12



### Publications on microinsurance

Project partners:  
ILO, MFW4A, IADB and  
the MicroInsurance Centre

"Protecting the poor – A microinsurance compendium – Volume II" came out in April 2012. Volume II of the comprehensive microinsurance compendium textbook addresses current issues discussed at our International Microinsurance Conference and complements Volume I. The book became available in English in 2006 and was translated into four languages. The two studies, "The landscape of microinsurance in Africa 2012" and "The landscape of microinsurance in Latin America and the Caribbean", were also published in 2012. They take an all-round look at the current status and dynamics of microinsurance markets on the respective continents.

Pages 12, 18 and 55



### "Climate change and justice" research project

Project partners:  
PIK, Potsdam,  
MISEREOR, Aachen and  
IGP, Munich

There is a tendency for global justice issues to be overlooked in the climate change debate. Together with partners, we studied the economic, ecological and development policy aspects of climate change. Our project results were published in two comprehensive studies. The first German study "Global, aber gerecht" ("Global yet equitable") came out in 2010. In June 2012, we presented a more comprehensive English version that was published by Springer-Verlag.

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### 2012 dialogue forums – "Power and influence: Who controls the world's destiny?"

At these events, which are open to the general public and held in Munich, we address current topics. Politicians, scientists and persons concerned take a look behind the scenes and engage the audience in discussion. The dialogue forums have been held regularly since 2005. They are designed to heighten awareness of our topics such as demographic developments, risk perception, and development policy.

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### Increasing resilience in Bangladesh

Project partners:  
ICCCAD, Dhaka and  
UNU-EHS, Bonn

With regard to natural catastrophes and the impact of climate change, Bangladesh is one of the countries most at risk in the world. Together with the United Nations University in Bonn, we support the International Centre for Climate Change and Development (ICCCAD). In addition to research on resilience of the people in Bangladesh, the aim is to safeguard several communities in risk zones against flood disasters. Experiences from Mozambique will help us implement the warning systems.

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### RISK Award

Project partners:  
UNISDR, Geneva and  
GRF, Davos

Disaster prevention is more vital than ever, and local projects show particular promise. The RISK Award, launched in 2012, will award up to €100,000 every two years to help fund groundbreaking projects. RISK Award projects are extending the scope of the early warning systems in Mozambique and Tonga. Knowledge acquired from UNU projects benefits our early warning projects.

Pages 36, 37 and 38



### Mozambique flood warning system

Project partners:  
GIZ, Maputo and  
IP Consult, Stuttgart

In Mozambique, the foundation and its partners are working with the local community to set up flood warning systems along a number of rivers. Early warning systems only work if the people at risk are involved in setting them up. The project was launched in 2005, and successes since then show that the systems work. Flood warning is a central element of our disaster prevention efforts.

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### Fog net project in Morocco

Project partner:  
Dar Si-Hmad, Sidi Ifni

Fog nets enable access to ample supplies of drinking water even in arid and virtually inaccessible regions. Our current project in Morocco is our second of such ventures (the first being Eritrea – from 2006 to 2009) and as from 2013, we will be funding further projects in Tanzania and Peru. Our aim is to ensure a fully functioning water supply and thus enhance the life quality and improve the resilience of people at risk.

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