



January/February

March/April/May

June/July

August/September

1 May
"Protegiendo al los pobres – Un compendio sobre microseguros"; the compendium on micro-insurance is now available in a Spanish version

23–24 July
2nd CCEMA expert workshop on "Climate Change, Environment and Migration" in Munich
[Page 7](#)

22–24 September
Experts meet at a CCEMA Panel alongside the UN General Assembly in New York City, USA



2–4 March
Workshop on micro-insurance in Uganda
[Page 15](#)

WORLD WATER WEEK
in Stockholm,
August 16–22, 2009

19–20 August
Climate and Water Days in course of the World Water Week 2009
[Page 32](#)



20 January
Dialogue forum "Raw materials shortages – an inevitable source of conflict!"; three more evening forums in the series "Resources" followed in February, March and April
[Page 28](#)



26 July–1 August
Summer Academy at Hohenkammer Castle, Munich, "Tipping points in humanitarian crises"
[Page 8](#)



24 March
Mozambique flood-warning system: delivery of a rescue boat and emergency equipment at the Rio Lucite
[Page 40](#)

1 November
 "Protegendo a população de baixa renda – Um compêndio de microsseguro"; the compendium on micro-insurance is released in Portuguese



1 October
 "Protéger les plus démunis – Guide de la microassurance"; the compendium on micro-insurance is released in French

3–5 November
 5th International Microinsurance Conference in Dakar, Senegal
[Page 14](#)



26 November
 Inaugural event "World in flux – The forgotten billions", Dialogue Forums 2009/2010



4–10 October
 Dialogue forum in India in the context of "Climate change and justice" organised by Misereor
[Page 16](#)

16 December
 Presentation of CCEMA at the "Development and Climate D&C Days" during the World Climate Conference in Copenhagen



13 December
 Inaugural event of the discussion series "The world upside down – For a new world risk community" in association with Allianz Kulturstiftung, Münchner Kammerspiele and Süddeutsche Zeitung

Cover

Women in Rajasthan, India, transport sand near the village of Paladi Bhopatan to build rainwater collection channels. The area has suffered from drought for the last eight years.

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The financial crisis cast a long shadow over 2009. The crisis not only left its mark globally but may even mark the beginning of a new era. It was against this background that we started our latest dialogue forum last autumn under the title of "The world in flux". Our previous dialogue forum on the subject of resources was no less topical, given the world's fast-diminishing supply of raw materials. You can read a report on the forums on page 28.

The 5th International Microinsurance Conference in Senegal was very well attended despite the economic crisis. Participation by over 400 experts from 64 countries is proof of increasing worldwide interest in insurance-based solutions to fight poverty, and I am delighted that the microinsurance conference has now become one of the foundation's flagship projects (page 14).

Further progress was also made on our disaster-prevention projects. Remote villages in Mozambique were connected to the flood-warning system (page 40) while the new RANET warning system in Tonga was able to prove its worth for the first time when a tsunami hit the kingdom in September. Both cases highlighted the vital role people play in these early-warning systems (page 42).

Early warning was also the focal point of the Summer Academy at Hohenkammer, where participants were asked to develop a system for recording the complex causes of environmental migration (page 8). There can be no doubt whatsoever that more and more people are having to leave their homelands as a result of global warming. This makes the meagre outcome of the Copenhagen climate conference all the more disappointing. The negotiations there showed that the poorest nations in the world need to be involved if workable solutions are to be found. This is all the more reason for us to step up our efforts in our "Climate change and justice" project (page 16).

The foundation will be celebrating its fifth anniversary on 7 April 2010 – a perfect opportunity to look back on our work and achievements of the last few years (see centre pages). In line with our motto "From Knowledge to Action", we will continue to tap into our benefactor's huge fund of knowledge and use it for the benefit of the people most at risk.



Thomas Loster
Chairman



Acting responsibly — Sharing knowledge

An interview with Dr. Hans-Jürgen Schinzler

As a member of Munich Re's Supervisory Board and Chairman of the Munich Re Foundation's Board of Trustees, Dr. Hans-Jürgen Schinzler has been closely involved in the foundation's work from the very outset. We look back on the first few years of the foundation's existence and forward to the issues it will address in the future.

The Munich Re Foundation commenced operations in April 2005. How would you sum up what has been achieved in the first five years?

The foundation quickly "found its feet", launching a number of important projects in areas such as micro-insurance, where much headway has been made with the help of the foundation's international conferences. The foundation has also scored some notable successes in the field of disaster prevention, the early-warning systems set up along rivers in central Mozambique, for instance, having functioned successfully on a number of occasions. Despite its global agenda, the foundation has also embraced a number of important issues close to home, here in Munich.

Can you give us an example?

One foundation dialogue forum entitled "The risks of living in Munich" was devoted to pandemics – currently in the news because of the new influenza strain – and the effects of fine dust and allergies in a city like Munich. Focusing on the Munich of tomorrow has yielded interesting perspectives of the future for areas such as education. To ensure Munich has a viable, open-minded education system in the future, geared to the needs of a major city, it is just as important to cater for disadvantaged children as to attract first-class academics.

Does one particular project mean a great deal to you?

I find it fascinating that large nets can be used to extract drinking water from fog in Eritrea. It's incredible that a net measuring only 40 m² is able to generate 200 litres of water a day. I'm also very keen on the Mozambique project because it gets everyone involved: district authorities, village communities and local youngsters. This provides the vital motivation factor that ensures a project succeeds. The flood early-warning system has prevented disaster on two occasions – when Cyclone Fabio struck in 2007 and during floods early in 2008. In the latter case, the community was so well prepared that it was able to assist neighbouring communities not linked to the system.

What will the foundation focus on in future?

The foundation's existing projects continue to demand our undivided attention. Much remains to be done in the field of development policy, for instance, where it looks as if the United Nations Millennium Development Goals may not be achieved after all. The results of the climate summit in Copenhagen also show that the impacts of climate change have not yet been brought home to all the decision-makers.

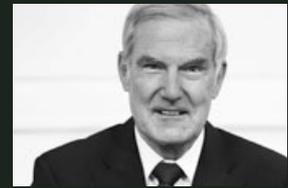
Reinsurers can be thought of as a kind of early-warning system, with tomorrow's risks already showing up on their radar. The same is true of the foundation. Its involvement with the UN University in Bonn has put migration well and truly on the agenda. Environmental migration is set to increase in the face of climate and environmental change. We will only come up with sustainable solutions to this problem provided we increase our knowledge of it and act in time.

Whilst on that subject, has the foundation lived up to its motto – "From Knowledge to Action"?

Absolutely. The foundation is able to tap Munich Re knowledge, such as the Geo Risks Research database. Knowledge is also contributed by Munich Re's agriculture, life and health experts. Thanks to the foundation, Munich Re's vast experience can also be deployed in countries otherwise closed to us because we have no clients there. The foundation's work is a prime example of what Nikolaus von Bomhard, the Chairman of the Munich Reinsurance Company, was referring to when he said, "Companies with broad knowledge bear a certain responsibility, and acting responsibly means sharing that knowledge. As well as donating our money, we also donate our knowledge".

You chair both the Supervisory Board of the Munich Reinsurance Company and the foundation's Board of Trustees. How is the foundation perceived within Munich Re?

It is held in high regard, being considered a key aspect of corporate responsibility. It fulfils an important role and shows that there is more to the Munich Re brand than being a global risk carrier because the foundation is able to address issues outside the scope of Munich Re's normal, day-to-day business. The foundation's commitment epitomises corporate social responsibility at Munich Re. In times of dwindling public resources, the foundation shows that it also fulfils a key social role. Munich Re holds social commitment in high esteem – it is a long-standing tradition that we are keen to preserve.



Dr. Hans-Jürgen Schinzler, established as former CEO of the Munich Reinsurance Company the Foundation. He chairs the Supervisory Board of the Munich Reinsurance Company and the foundation's Board of Trustees.



Foundation Chair New professors appointed to the Chair in Social Vulnerability

The Chair in Social Vulnerability at the UN University in Bonn has been the base of several years' scientific study into the exposure of human beings and the environment to natural hazards and other disasters, primarily in the developing world. The foundation and the United Nations University (UNU-EHS) have appointed three prominent experts to be Chair holders for one year each in the period 2009–2012.

Since its establishment, the Munich Re Foundation has backed natural catastrophe research and the development of programmes designed to reduce the attendant risks and social vulnerability. The foundation Chair is based at the UNU-EHS Institute for Environment and Human Security. Its aim is to train young academics of different nationalities in all aspects of disaster reduction so that they can then apply the knowledge in their native countries. The Chair is held by outstanding international scientists on a rotating basis.

The newly appointed Chair holders will continue the work of their predecessors, dedicating their research primarily to the key issue of environmental migration. The research results will also be used to further the work of the Climate Change, Environment and Migration Alliance (CEMA), whose aim is to pool and coordinate international migration research and raise its political profile (see page 7).

The following have been designated as Chair holders:

Professor Michelle T. Leighton (2009/10)

Michelle Leighton is director of the Human Rights programmes at the Center for Law and Global Justice of the University of San Francisco's Law Faculty. A specialist in international human rights and environmental issues, she also counsels governments, intergovernmental agencies and non-profit organisations. She served as a special adviser to the United Nations Environment Programme, International Fund for Agricultural Development, International Organization for Migration and United States Congressional Commission on Immigration Reform.

Professor Mohamed Hamza (2010/11)

Mohamed Hamza specialises in Disaster Risk Management and Vulnerability Studies at Lund University in Sweden and at the Oxford Brookes University's Centre for Emergency and Development Practice (CENDEP) in the UK. He is also Senior Research Fellow at the Stockholm Environment Institute (SEI) in Oxford. He has long-standing experience with international development organisations, including the World Bank, and has undertaken consultancies on disaster-management competence-building and training in many Asian, African and European countries.

Professor Susan Cutter (2011/12)

Susan Cutter teaches geography at the University of South Carolina, where she is director of the Hazards and Vulnerability Research Institute. The main focus of her research is on hazard vulnerability in relation to natural disaster events. She is the author of numerous books and peer-reviewed articles and has conducted field studies into the role of information technology in catastrophes. Professor Cutter is a member of a number of bodies advising the US government.

Michelle Leighton, Mohamed Hamza and Susan Cutter were recently appointed Chair holders for the period 2010–2012. Their fields of expertise are international law, catastrophe management and risk management.



CCEMA Climate Change, Environment and Migration Alliance



Climate change is forcing more and more people to leave their ancestral homelands. This photo shows temporary shelters in northeast Kenya, where decades of severe drought have destroyed pasturelands used by herdsmen and nomads.

Founded in April 2008, the Climate Change, Environment and Migration Alliance (CCEMA) aims to focus greater political and public attention on the important issue of environmental migration, to broaden the knowledge base and offer a neutral and open forum for discussion. In 2008, the International Organisation for Migration (IOM) estimated that there were 170 million migrants worldwide. To promote interdisciplinary discussion, the Munich Re Foundation organised the second expert workshop on climate change, the environment and migration in July 2009. It was attended by delegates from the IOM, the United Nations University Institute for Environment and Human Security (UNU-EHS) in Bonn and the United Nations Environment Programme (UNEP). The Rockefeller Foundation co-financed both workshops.

The main item on the agenda was to create a solid planning basis for the future work of the Alliance, key aspects of which are qualitative case studies in conjunction with quantitative methods based on global data networks and observation tools. The 28 experts attending the workshop clarified a number of detailed issues and drew up programmes for each of the four central topics: triggers and drivers of migration, the migration process, adaptation, and governance.

CCEMA is an innovative and forward-looking initiative in this field. The International Organisation for Migration (IOM) and the United Nations High Commissioner for Refugees (UNHCR) have set up an Inter-Agency Standing Committee (IASC) task force on climate change, migration and displacement in which members of the CCEMA are involved. The IASC advocated setting as many binding targets as possible at the global summit negotiations in Copenhagen because the time has come to act – before environmental migration takes on a whole new dimension as a result of global warming.

For further information
on this issue:

Climate Change,
Environment and Migration
Alliance (CCEMA)
www.ccema-portal.org

UNU-EHS
www.ehs.unu.edu

Fourth Summer Academy 2009 Tipping points — Small cause, big effect

Environmental migration is difficult to measure and a subject on which even expert opinions are divided. To make this topic accessible to a broader level of politicians and scientists, the 2009 Summer Academy identified critical factors that cause people to abandon their ancestral homelands. The new research approach devised by the young participants will improve our understanding of the complex cause-and-effect relationship between climate change and migration.

“Environmental migration is not relevant for the IPCC – application refused!” This or similar nightmares may well have plagued the 20 or so people attending the 2009 Summer Academy, who often worked late into the night putting the finishing touches to their IPCC scoping papers. Tom Downing of the Stockholm Environment Institute, chairing the Academy, had set the multinational gathering of young academics at Schloss Hohenkammer near Munich a tricky task: to perform a simulation exercise in which they would persuade an IPCC committee to include “Tipping points in humanitarian crises” in its forthcoming Fifth Assessment Report.

The underlying concept was that, once climate change takes us beyond certain tipping points, humanitarian crises result in the form of uncoordinated migratory flows or social tensions. Downing, holder of the foundation Chair in Social Vulnerability at the UN University and an IPCC scientist, is very much in favour of interactive teaching methods. His aim was therefore not only to impart scientific knowledge to participants from a range of countries (including Ethiopia, South Africa, Cameroon, Japan, India, New Zealand and Indonesia) but also to create an effective group dynamic.

This meant that participants from disciplines as diverse as anthropology, economics and geography had to combine their individual perspectives in the course of a series of tight working sessions and under pressure of time. The highlight was the final presentation before an audience of senior professors headed by Professor Susan Cutter (University of South Carolina) and an external expert from the United Nations International Strategy on Disaster Reduction (UNISDR). The result was highly satisfactory: using a variety of techniques, the participants submitted a well-researched scoping paper, gave convincing and succinct presentations and drafted a press release to persuade the IPCC to approve their application.

Human vulnerability depends on both the intensity of climate change and human society’s resilience. Research into the complexities of this biophysical system has shown just how vital tipping points can be. We need to improve our understanding of them because they can cause radical systemic changes. The determining factor is not necessarily a single major event: in some cases, a combination of large and small perturbations is enough. The concept featured a model they themselves had developed, referred to as the Hot Systems Approach.

Pencils, pinboards and notebooks – all came in handy. More than 20 young academics from 12 countries worked day and night on an IPCC submission.





Summer Academy participants on an outing in Munich.

Ben Zhu and Xiaomeng Shen from the UNU, Bonn, prepared and managed the week's programme.

On the last day, senior professors and tutors discussed the papers submitted at the Academy.

The Hot Systems Approach departs from the more typical geographic focus expressed by the term "hot spot" because there are often commonalities between consequences of livelihood, population, and ecosystem vulnerability in disparate geographic locations. A "hot system" will likely be characterised by the interplay of dynamic overlapping vulnerabilities (e.g. poverty, unstable political and economic contexts and limited livelihood opportunities) and exposure to hazards in the context of a changing climate. Even apparently minor climate changes can tip the ecological and social balance of such a system, plunging people into catastrophe.

The Hot Systems Approach was further refined by the participants in the months following the Academy. The programme will constitute another cornerstone of vulnerability research. This is nevertheless a field where much remains to be done. For instance, in addition to the causes involved, the responsibilities, rights and duties of migrants are still to be clarified. For that reason, the July 2010 Summer Academy, chaired by Professor Michelle Leighton of the University of San Francisco, will examine the issue "Protecting environmental migrants: Creating new policy and institutional frameworks", placing greater emphasis on the political dimension of environmental migration.

For further information
on this issue:

Foundation Chair in Social
Vulnerability at the
Institute for Environment
and Human Security,
United Nations University
(UNU-EHS)
www.ehs.unu.edu



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Microinsurance and climate change — Hope for millions?

Thomas Loster
and Dirk Reinhard

Microinsurance can help the inhabitants of poor countries to protect themselves against climate change impacts. But it will not work unless the products are tailored to the needs of the individual regions.

The IPCC'S fourth status report, published in 2007, provided conclusive evidence of the link between global warming and the more frequent and intense occurrence of extreme weather events. Scientists warn that floods and droughts are going to increase, whilst coastal areas, river deltas and entire archipelagos are threatened by rising sea levels. The developing countries, which have virtually no system of insurance, will suffer most, and only 100 million people, less than 3% of the population of the 100 poorest countries in the world, are covered by microinsurance.

Despite these statistics, microinsurance is a fast-growing sector in the developing and emerging countries. According to the International Labour Organization (ILO), the number of microinsurance policies rose by 80% between 2005 and 2009 in Africa alone. Most microinsurance policies cover major life risks such as sickness or death, often in combination with a microloan. A number of special features will have to be taken into account if microinsurance is extended to cover climate change impacts.

One of these is that the extent of the areas affected by the different weather risks varies considerably. Whilst flash flooding on a stretch of river may involve a few hundred people, a tropical cyclone can affect hundreds of thousands and a severe drought several million. Each individual case requires a specific underwriting technique: from microinsurance policies, in the case of individuals, to insurance pools and catastrophe bonds. Microinsurance can soon reach its limits when a natural catastrophe occurs. If thousands of claims are filed simultaneously, this can decimate entire portfolios. Claims handling is a costly process and, given the low premiums involved, it can take years if not decades to recoup the losses. A further consideration is: What happens in the case of an agricultural microinsurance policy where the temperature or precipitation figures fall just short of the indemnity trigger? The insureds are then left to deal with all-too-evident losses on their own, causing people to lose faith in the system for years.

Not only microinsurance but also index insurance, weather derivatives and other covers face major challenges. The starting point is the assumption of liability, and this has to take into account both the risks themselves and unforeseen loss accumulations. The basic rule that applies here is that the greater the geographical spread and the longer the period of insurance, the better. Additional requirements are transparent conditions and claims handling. If loss payments are relatively frequent, this boosts the interest of the people concerned, helping insurance systems to achieve the breakthrough. Moreover, apart from the obvious administrative and financial challenges, microinsurance also has to address other special circumstances. As a rule, programmes taken straight off the drawing board have little chance of success. We must get the people at risk involved if we are to formulate solutions that meet their needs and requirements. People are less likely to accept microinsurance if there is too wide a gap between premiums and claims payments. It is essential they understand that high-frequency events are not economically insurable. This aspect will assume greater importance as extreme weather events become more frequent. People on low incomes are perfectly willing to pay for a key product. Their decision will be influenced not only by the amount of premium in absolute terms but also by the possibility of paying in instalments.

A number of microinsurance products broadly satisfying these criteria have recently been launched in the market. They include extreme flood coverage for a major city in Asia, tropical cyclone cover in the Philippines and cover against extreme winters in Mongolia. However, this does not alter the fact that microinsurance is still in its infancy.

The role of microinsurance was acknowledged by those taking part in the United Nations climate convention, as can be seen from the current Copenhagen Process. Now, it is up to the players – microfinance organisations, insurance industry, regulatory authorities, governments and donor agencies – to formulate viable solutions. However, it is clear that microinsurance alone will not be sufficient to mitigate the impact climate change will have on the poor. Mesoscale and macroscale solutions are also needed.

The path to global microinsurance may be a difficult one, but we must not falter. Climate change leaves us with no alternative.



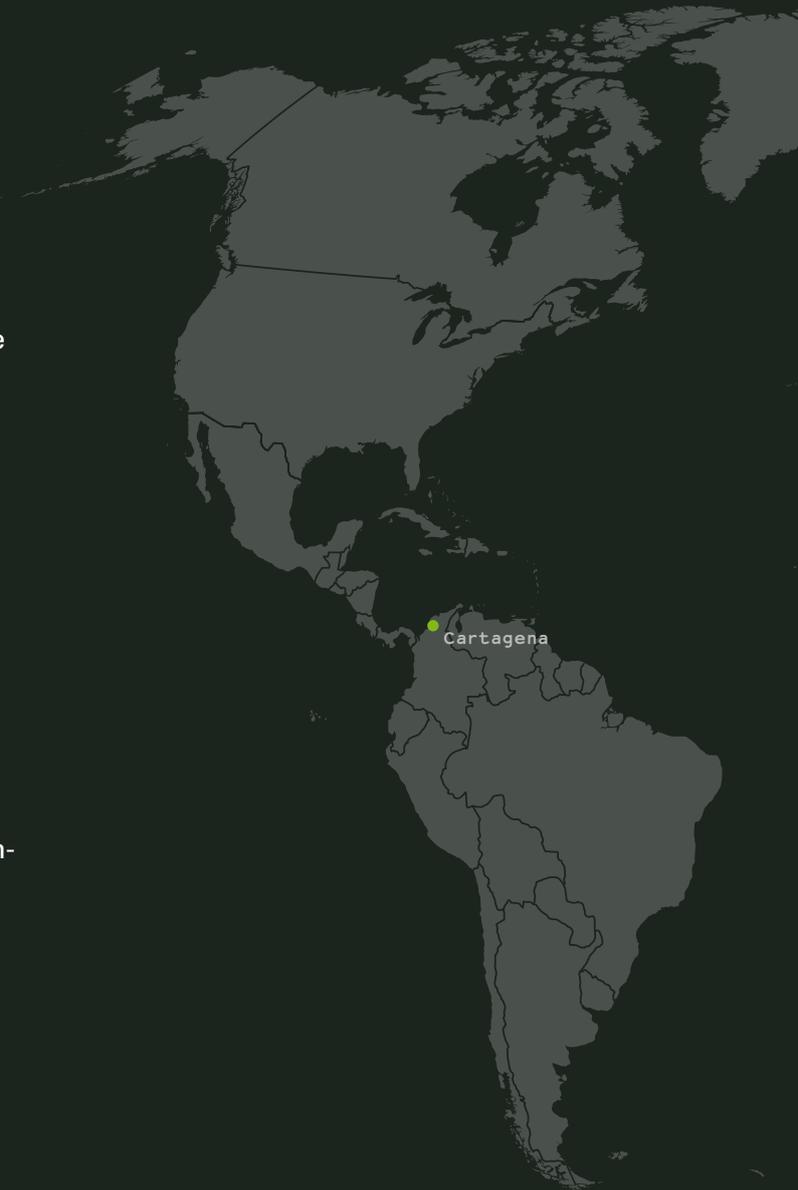
Thomas Loster

Chairman of the Munich Re Foundation, a disaster-prevention and climate expert, is involved in the development of poverty-reduction programmes in times of climate change.



Dirk Reinhard

As Deputy Chairman specialising in sustainable investment and microinsurance, he is also Project Manager of the annual International Microinsurance Conference.



13 Microinsurance conferences
2005–2009
Countries represented

The chart shows that the conferences attracted increasing numbers. Jointly organised by the foundation and the Microinsurance Network, they have been attended by a total of 1,400 delegates from 90 countries over the past five years.

Source: Munich Re Foundation 2009



Year	2005	2006	2007	2008	2009
Venue	Munich	Cape Town	Mumbai	Cartagena	Dakar
Countries represented	Germany 23	South Africa 29	India 48	Colombia 45	Senegal 64

5th International Microinsurance Conference Overcoming the hurdles — Exploiting the opportunities

At the 5th International Microinsurance Conference, held at the beginning of November 2009 in Dakar, Senegal, nearly 400 experts from 64 countries discussed ways of providing affordable insurance products for the world's poor.

Following Cape Town in 2006, this was the second of the conferences co-organised with the Microinsurance Network to be held in Africa. It focused on health insurance, the interlinking of microinsurance and microfinance and the development of microinsurance in Africa. As part of a new cooperation venture, launched with the renowned "Journal of Risk and Insurance", economic research findings were presented on the economic effects of microinsurance as an insurance tool for the low-income market. The key message given to the conference by Senegalese President Abdoulaye Wade was that "microinsurance can help in the fight on poverty and, at the same time, allow the insurance sector to make a profit". To achieve this, however, more pooling of knowledge and experience were needed.

A new study published in Dakar, "The Landscape of Microinsurance in Africa", notes that the African market is dominated by credit life, a low-value product which pays out when a bank borrower dies. Nevertheless, substantial parts of the continent remain almost barren in terms of microinsurance, particularly where health, agriculture and property covers are concerned. Over 14 million people on low incomes were covered at the end of 2008, 80% up on 2005 but still a mere fraction of the 400 million potential microinsurance customers.

To further the cause of microinsurance, one conference workshop looked at regulatory barriers. It was hosted by the International Association of Insurance Supervisors (IAIS), the Access to Insurance Initiative (aII) – a new network launched by the GTZ – and the Microinsurance Network. The 80 participants from 20 countries, including representatives of regulatory bodies, agreed that regulatory rules are needed to provide economical, transparent, consumer-friendly products and services.

Since the first international conference in 2005, microinsurance has increasingly caught the attention of experts, policy-makers and insurers (cf. page 13). The next International Microinsurance Conference, to be held at Manila in the Philippines in November 2010, will no doubt be met with a positive response. Only as more is known about microinsurance will this key insurance tool further consolidate its standing.

5th International Microinsurance Conference in Senegal. More than 400 experts gathered in Dakar, Senegal, to discuss the latest microinsurance developments.



For further information
on this issue:

Microinsurance
Conference
[www.microinsurance
conference2009.org](http://www.microinsuranceconference2009.org)

Microinsurance in practice: Visit to the market in Kampala



Kampala's Owino market is the biggest in East Africa.

The Owino market, at the heart of the Ugandan capital, Kampala, is one of East Africa's biggest markets. With 10,000 stalls and 50,000 traders, it offers all the necessities of everyday life. An office of Faulu, a microfinance organisation belonging to the global network Opportunity International and servicing 2,000 customers, is located in the midst of the hustle and bustle. The market traders use loans granted by Faulu – usually for amounts ranging between 100 and 1,000 dollars granted for periods of 4–12 months – to finance purchases of supplies.

"If I am unable to do my job at the market, I will face serious problems as I will not be able to provide for my family."

A trader at the Owino market

For that reason, Faulu offers credit insurance in connection with the loans covering not only death and serious illness but also flood and fire. The risk carrier is the National Insurance Corporation (NIC). MicroEnsure, a subsidiary of Opportunity International, provides administrative services such as registering proposals and checking claims at reasonable cost. Faulu aims to close old loans within eight days in the event of a loss, leaving the way clear for a fresh start.

Second-hand goods from Europe are piled high in the clothing market. Fabric remnants are everywhere and fire precautions unheard of. On 4 March 2009, a week before our visit, large sections of the market went up in flames, and Faulu received 300 claims. There were few remaining signs of the fire, most of the stalls having been rebuilt. "After the fire, we received a lot of applications," said Margaret Kiskaye, Faulu's Finance Officer. The market also houses a medical centre. "I'd like to have health insurance," one female trader stated, "but that's not available here."

MicroEnsure's groundwork and Faulu's commitment are impressive. Success clearly depends on having direct contact with people and understanding their needs. Despite the very high interest rates up to 70% per year and relatively high premiums, demand is heavy. It is likely to be some time before health insurance is available.

The excursion was organised as part of a World Bank microinsurance workshop held in Uganda and co-organised by the Munich Re Foundation.

Climate change and justice No global deal in sight

Climate change must not take place at the expense of the developing nations. It is simply not fair to impose drastic emission targets on poorer countries or divert funds that would otherwise go towards mitigating poverty in these regions.

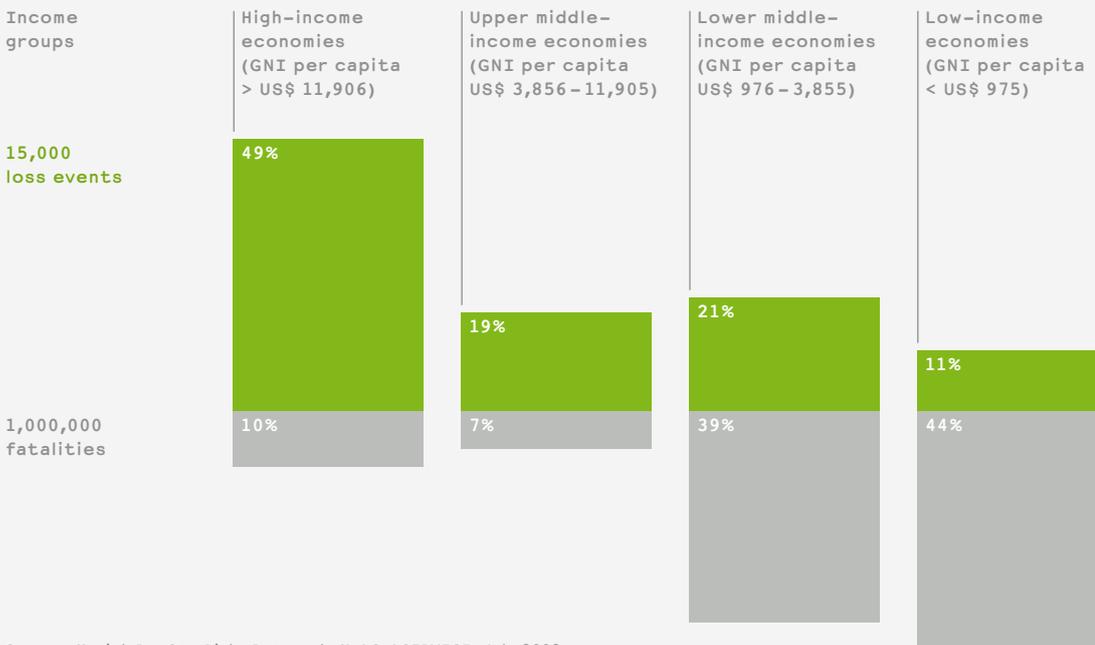
The “Climate change and justice” project tries to find solutions to the problem using an approach based on a combination of scientific research and social ethics. Climate change impacts threaten the livelihoods of many and cause poverty to increase. Although drinking water supplies are expected to rise globally, the main beneficiaries will be regions that already have enough water, whilst precipitation levels will fall significantly in arid regions. The situation will be further aggravated by the fact that water shortages and higher average temperatures have been taking their toll on agriculture and food security.

The objective of the “Climate change and justice” project, launched in 2007 by the Catholic charity MISEREOR, the Potsdam Institute for Climate Impact Research (PIK), the Institute for Social and Development Studies (IGP) and the Munich Re Foundation, is to formulate global climate and energy-policy options designed to support rather than undermine efforts to reduce poverty.

Research shows that climate change can be curbed at moderate cost provided the available technological means are deployed and the global players involved in protecting the climate at the earliest possible juncture. A major opportunity to broker a global deal was missed at the December 2009 climate summit in Copenhagen. Unless we act quickly, we will be risking many people’s right to a dignified existence and jeopardising the prospects of future generations.

Global weather-related natural catastrophes 1980–2009

The 15,000 weather-related natural catastrophes recorded were more or less equally split between the industrialised and the developing countries. Fatality statistics show that poor countries with a low gross national income (GNI) are harder hit by storms, floods and droughts, accounting for 83% of the one million victims.



Source: Munich Re, Geo Risks Research, NatCatSERVICE, July 2009

Climate change: A momentous issue

An interview with Professor Josef Sayer



“We have to put pressure on those responsible.”

Professor Josef Sayer

Professor Josef Sayer, Director General of MISEREOR, launched in collaboration with the foundation the “Climate change and justice” project.

What does “Climate change and justice” mean to MISEREOR?

The main feature of this project is cooperation between north and south, and the way it pools the skills and expertise of partners from Germany, Africa, Asia and Latin America. It’s not primarily a data-gathering exercise; the aim is to find fair solutions for people suffering from global warming impacts for which they themselves bear little responsibility. The project sets in motion a learning process designed to promote active involvement in the momentous issue of climate change.

You have organised dialogue forums in the countries worst affected. Where have they taken place?

Climate change affects different regions in very different ways, as demand for adaptation projects from our partners shows. Consequently, dialogue forums have been held in Central America, Bolivia and the Amazon region in Brazil. In Africa, forums were organised in the Sahel region – with partners from Mali, Burkina Faso and Niger – and also in South Africa. In Asia they were held at locations ranging from India, Bangladesh, Nepal, Indonesia to the Philippines.

What conclusions would you draw from the forums?

The main conclusion I would draw is that those concerned are not simply standing by and waiting for the industrialised world to provide adaptation aid. I was surprised to see the efforts our MISEREOR partners are already making in order to adapt to climate change, despite relatively modest resources. For instance, models have been developed for the Sahel zone showing that agriculture is feasible even in periods of drought. Other regions benefit from this experience. The fact that people in the countries where the forums were staged have acknowledged the need to take action to avoid carbon emissions also came as a surprise. Moreover, they expect the corresponding technology to be transferred on equitable terms that enable them to achieve sustainable development.

Do you think the global community will succeed in curbing climate change?

I certainly hope so. There is no viable alternative. I was encouraged to see that people from all generations and walks of life had come to Copenhagen for the global climate summit. They were wholeheartedly behind the climate targets and willing to go to great lengths to support it. On the other hand, I was extremely frustrated at the slow conduct of negotiations and the attitude of the industrialised and emerging countries. It’s now up to us to accept our joint responsibility and pool our resources so that we can limit global warming to 2°C.

MISEREOR, the Munich Re Foundation, PIK and IGP are very diverse bedfellows. How do you view this alliance or partnership?

The appeal and strength of the project lie in the differences between us. Scientific expertise, ethical reflection and insurance know-how coupled with the experience of MISEREOR’s many partners in Africa, Asia, Oceania and Latin America is a potent mix. Unless future generations inherit a world where they can live in dignity, they will one day turn to us and say: “You had knowledge, the facts and the figures – why didn’t you do something?”

Review

As part of a leading global reinsurer and risk carrier, it makes sense that the foundation should also operate at a global level. Since its inception five years ago in April 2005, the foundation has therefore focused strongly on projects in areas such as water supply, disaster prevention, the environment and climate risk. One of the foundation's primary goals is to promote the use of insurance-based solutions to fight poverty, with microinsurance playing a major role.

Even in the foundation's early days, it soon became clear that knowledge and awareness were key elements in ensuring that people are able to take the right action when faced with risk. A large number of our projects therefore focus on gaining a better understanding of the people at risk and raising awareness of the global challenges we face.



2005/The project work begins

The foundation's first project was to set up a Chair in Social Vulnerability at the UN University in Bonn to promote research into solutions tailored to the needs of populations facing risks posed by climate change, megacities, migration and other pressing problems.

2007/Industrial nations and their carbon debt

Was the slogan that marked the launch of the foundation's project on climate change and justice. Scientists at the Potsdam Institute for Climate Impact Research (PIK) used complex models to calculate energy paths that would enable the world to limit global warming to 2°C maximum. Our partners, MISEREOR and the Institute for Social and Development Studies (IGP) at the Munich School of Philosophy, focus on the global justice aspects.

Research



2006/Young people with boundless energy — Protect the climate!

Was the title of a nationwide competition organised by the foundation together with various partner organisations and involving 26,000 schools throughout Germany. The 12 winners were presented with their awards at a ceremony in Berlin. A special prize was awarded to 16-year-old Sören Klabunde from Sollstedt, who invented a mirror distillation device designed to enable the populations of poor countries to obtain drinking water from contaminated water.

2006/Hohenkammer think tank

The Summer Academy opened its doors to young researchers from around the world at Schloss Hohenkammer. The main item on the agenda of the first Academy was global water hotspots. The following year, participants discussed megacity slums and resettlement programmes with Debashish Bhattacharyya, Mayor of Kolkata. At the 2009 Summer Academy, a group of young academics drafted a scoping paper for submission to the Intergovernmental Panel on Climate Change (IPCC).



2009/The megacity resilience framework

The tenth publication of our chair project at the UN University in Bonn will appear in the spring of 2010. This policy brief suggests a fresh look at the problem of overcrowded megacity slums. The Authors, alumni of the second Summer Academy, drew on experience they gathered there.



2005/Risk awareness is key

Delegates attending the international symposium on worldwide disaster prevention drafted the Hohenkammer Charter. Among the institutions represented were the United Nations International Strategy for Disaster Reduction (UNISDR), the German Committee for Disaster Reduction (DKKV), the International Red Cross and the World Bank.

Networking

2006/Protecting the poor—A microinsurance compendium

In a joint effort with the International Labour Organization (ILO), the foundation published the first ever comprehensive microinsurance manual. It is the first internationally recognised compendium in this field and gives global access to the basic facts and figures. In 2009, translations into French, Spanish and Portuguese were published.



2005/Fighting poverty with microinsurance

The foundation's 1st International Microinsurance Conference, held at Schloss Hohenkammer in 2005, marked the beginning of a global approach to Microinsurance. It was followed by conferences in Cape Town (2006), Mumbai (2007) and Cartagena (2008). The 2009 conference, held in Senegal, was attended by 400 experts from 64 countries. With the fifth year "under its belt", the conference has taken its place on the global stage.



2008/Climigration

In April 2008, the Climate Change, Environment and Migration Alliance (CCEMA) was set up by the foundation, the International Organization for Migration (IOM), the United Nations University Institute for Environment and Human Security (UNU-EHS) and the United Nations Environment Programme (UNEP). The Alliance advocates the implementation of swift, humane and sustainable solutions.

2007/Facts behind the global situation

The foundation sponsored a project organised by the Berlin Institute for Population and Development and the German Foundation for World Population that investigated the state of the world's population. A poster featuring a series of world maps illustrated the links between poverty, health, education and mortality rates.

2008/Water and climate change

Over 2,000 experts meet annually in Stockholm to discuss the impacts of global warming at the World Water Week. Munich Re shared its expertise at workshops held in conjunction with various partner organisations. These highlighted the role of water as a resource and risk factor.

Sensitisation



2005/Water — Facets of a life elixir

The foundation's annual dialogue forums opened with "Water – Facets of a life elixir". The forums provide a platform for experts and members of the public to discuss important political, social and scientific issues. Who could have foreseen that the 2006 topic "What if an epidemic strikes – Is Munich prepared?" would have been thrust into the limelight just three years later, with the advent of swine flu. The experts allayed public fears: Munich is prepared.



2006/Lessons from space

The foundation helped to organise the "Climate expedition", an educational project run by environmental and development organisation Germanwatch. With the aid of modern technology and up-to-the-minute satellite images, schoolchildren are able to observe how the earth and its climate have been changing in recent decades.



2009/Dialogue forums in times of financial crisis

The 2009/10 series discussed progress and setbacks in the global community's pursuit of development goals at times when finances are stretched. Experts are calling for a change of heart: "Poverty is not created by the poor. It is created by the institutions that we have built around us. We need change", was the message underscored by Professor Radermacher. He was supported by Professor von Weizsäcker.



2006/Foundation's early-warning prize

The Munich Re Foundation awarded project funding to the tune of 50,000 Euro to an early-warning system in Tonga at the International Conference on Early Warning, EWC III, held in Bonn in 2006. Thanks to RANET, a new high-frequency radio system, warnings can be relayed even to Tonga's remote islands. The island groups of Nuku'alofa, Vava'u, and Ha'apai were linked to the RANET warning system in 2008. Tonga's national disaster-prevention authority now plans to extend the system.

2008/Emergency aid hits the spot!

Over 80,000 people were killed when Pakistan suffered a severe earthquake in October 2005. In May 2008, Cyclone Nargis devastated much of Myanmar, killing nearly 100,000 people. The foundation helps alleviate cases of acute need. For instance, in Pakistan we arranged for winter-proof tents and water filters to be distributed, whilst in Myanmar we supported a project by the arche noVa organisation to clean contaminated tanks and restore drinking water supplies.

Action



2007/Mozambique hit by Cyclone Favio

In February 2007, Mozambique's south coast was struck by a cyclone travelling at over 260 km/h. In late December, floods caused heavy losses in the country's interior. The foundation's early-warning system functioned successfully on both occasions, enabling riverside dwellers to reach safety.

2005/Red flag signals danger

Hundreds of people face a major flood threat in Mozambique on a virtually annual basis. By setting up early-warning systems, firstly on the Búzi and then, in 2007, on the Save, we have created a simple but effective early-warning tool that serves as a role model. We worked with an experienced partner, the German Association for Technical Cooperation (GTZ), which operates in the field, experts explaining to riverside villagers what action they should take when floods occur. If danger threatens, red flags are raised warning people to seek refuge.

2006/Collecting water on the high plateau

The lives of the inhabitants of Eritrea's arid high plateau are marked by drought and lack of water. We supported efforts by the WaterFoundation Ebenhausen and Vision Eritrea to supply water to 2,500 schoolchildren and 120 local families. In Nefasit and Arberobue, 20 special nets were set up to capture fog droplets. During the foggy season, a single net has the capacity to provide over 200 litres of drinking water a day.



Outlook

Although we have developed early-warning systems and increased networking of microinsurance experts, our work is far from finished, as important environmental risk issues will continue to demand our full attention. The dialogue forums in Munich and the broad range of topics that the foundation covers help to meet the enormous demand for more knowledge on sustainable concepts and solutions.



← CAR ←
PARKING

World of change — A plea for more information

Dr. Hans Dembowski

National solutions are now grossly inadequate when it comes to addressing today's global problems. This not only prompts questions about the legitimacy of government decisions but also renders a profound knowledge of global risks and the way they interact indispensable.

Sociologist Manuel Castells notes that, whilst governments are losing power in the course of globalisation, they are at the same time gaining influence. They are losing power because major issues like climate change, the stability of the financial system, migration, infectious diseases and combating terrorism are no longer within their nation-state control.

However, governments are gaining influence because the international agreements to which they are party apply over an area extending far beyond the nation state. Their influence is also increasing due to the absence of the classic separation of powers, legislature and judiciary often having no choice but to accept the agreement that the executive head of their state has negotiated with other governments.

This trend is often criticised as unacceptable from a democratic legitimacy perspective but there is no realistic alternative. Only the USA, the dominant western power, clings obstinately to the concept of indivisible national sovereignty. The citizens of other rich nations have long since grown accustomed to the fact that political decisions on issues like climate stability, rescuing the financial system or dealing with the Taliban are taken at international summits.

Those taking part in such summits use terminology that is difficult to grasp for two reasons: firstly, because the subject matter is indeed complex and, secondly, because vaguely formulated legal terms are more conducive to consensus and compromise. According to this school of thought, the use of jargon is justified on structural grounds and not some fiendish plot hatched by the powers that be. However, this in itself gives rise to another democracy issue, namely the growing use of populist arguments in public debate.

The English language does not have an exact equivalent of the German "Politik". It signifies politics (dealing and trading in slogans), policies (programmes for solving major problems), and polity (the institutional framework within which politics and policy take place).

Ideally, in all democracies, public debate circles around implementation of the most judicious policies. However, the less comprehensible the jargon, the more the polity tends to be guided by politics. In other words, the greater the likelihood that the political decision-making will be dominated by catchwords used in the popular press.

This describes the business as usual of global regulation since the fall of the Berlin Wall. However, the pressure to act is greatly increasing as the individual political areas become more closely entwined. For instance, it is already clear that the migration issue will be further aggravated by climate change. But, on the other hand, with the budgets of many major economies running record deficits due to the financial crisis, less money is available for development aid and environmental protection. At the same time, growing poverty coupled with changing environmental conditions constitute a fertile breeding ground for political crises, with war and violence hastening environmental degradation and forcing people to flee.

We are not used to thinking of global problems in terms of such complex scenarios. Even now, the debate on the Iraq war does not take into account its possible effects on the climate, and Germany's health policy dismisses the possibility that malaria will spread within Europe as a result of climate change as far-fetched.

It is one thing to take complicated scenarios seriously but quite another to design and implement policies of corresponding complexity. Anyone who understands World Trade Organization terminology is unlikely to have a similar grasp of the vocabulary of the United Nations Framework Convention on Climate Change and basic peace-keeping and nation-building concepts.

The Munich Re Foundation's motto is "From Knowledge to Action". In the light of global challenges, this leitmotif is even more demanding and significant than appears at first sight. For, unless we are informed about global risks and the way they interact, we will not progress towards the change our world so urgently needs.



Dr. Hans Dembowski is Editor in Chief of the international journal D+C Development and Cooperation.



Dialogue forums on resources Where is the journey heading?

Record oil prices, food crises and shortages of raw materials have triggered alarm bells worldwide, hence the choice of “Resources – Where is the journey heading” as the theme of the Munich Re Foundation’s 2008/09 dialogue forum series. The discussions showed that there is no pat solution to the issue of scarce resources but that the difficulties can be surmounted given good will and determination.

Current status

It is now more than 30 years since Dennis Meadows, one of the Club of Rome pioneers, wrote a report on raw material shortages exploring the limits to growth. The problems are certainly no less acute today. The brisk economic growth of the recent past has driven raw material prices sky-high, a trend just briefly halted by the global economic crisis. Conflicts caused by soaring food prices, already witnessed in Haiti, Mexico, Thailand and elsewhere, are likely to increase due to the rapid rise in the world’s population.

Are our natural resources running out?

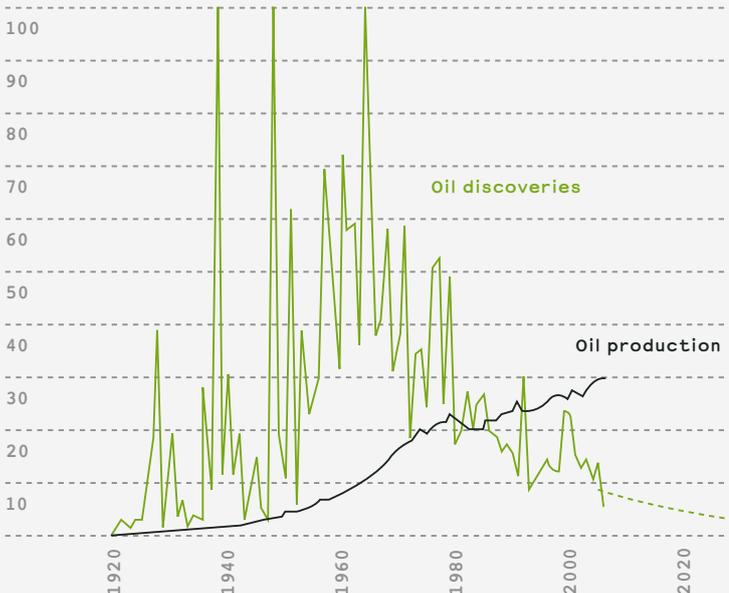
Dr. Thilo Bode, director of consumer protection organisation foodwatch, believes such concerns are overstated and that, in the case of non-renewable commodities like metals, rising prices and recycling will help mitigate the effects of shortages. However, he foresees problems if the consumption of renewable commodities outstrips the rate at which they are replaced. “The ecosystem is being harmed, biodiversity is declining”, the former head of Greenpeace concluded. The key sustainability issue is “what level of economic growth we can afford”. Bode sees no immediate threat of fossil fuel shortages: “We have plenty of coal. The problem is carbon dioxide and the way it is changing the climate.”

However, where oil is concerned, according to Dr. Werner Zittel, energy specialist at Ludwig-Bölkow-Systemtechnik GmbH, we will have to be prepared for dwindling supplies. “Discoveries of new deposits peaked as far back as the 1960s and 1970s.” Now, it is not just a handful of countries like the UK and USA that are reaching their production limits. Globally, the quantity of oil being extracted exceeds new discoveries. Zittel is convinced that “peak oil is now!” and concerned that, by 2030, production could have fallen by 50%. “The era of cheap oil is over.”

Oil is running out!

Discoveries of new deposits peaked as far back as the 1960s and 1970s. Now a number of countries in addition to the UK and the USA, for instance, have reached their production limits. The quantity of oil being pumped out of the earth exceeds new discoveries.

Oil discovery and production figures (1920–2005)
Barrels (billions/year)



Source: IHS Energy/ASPO

Can the planet still feed us?

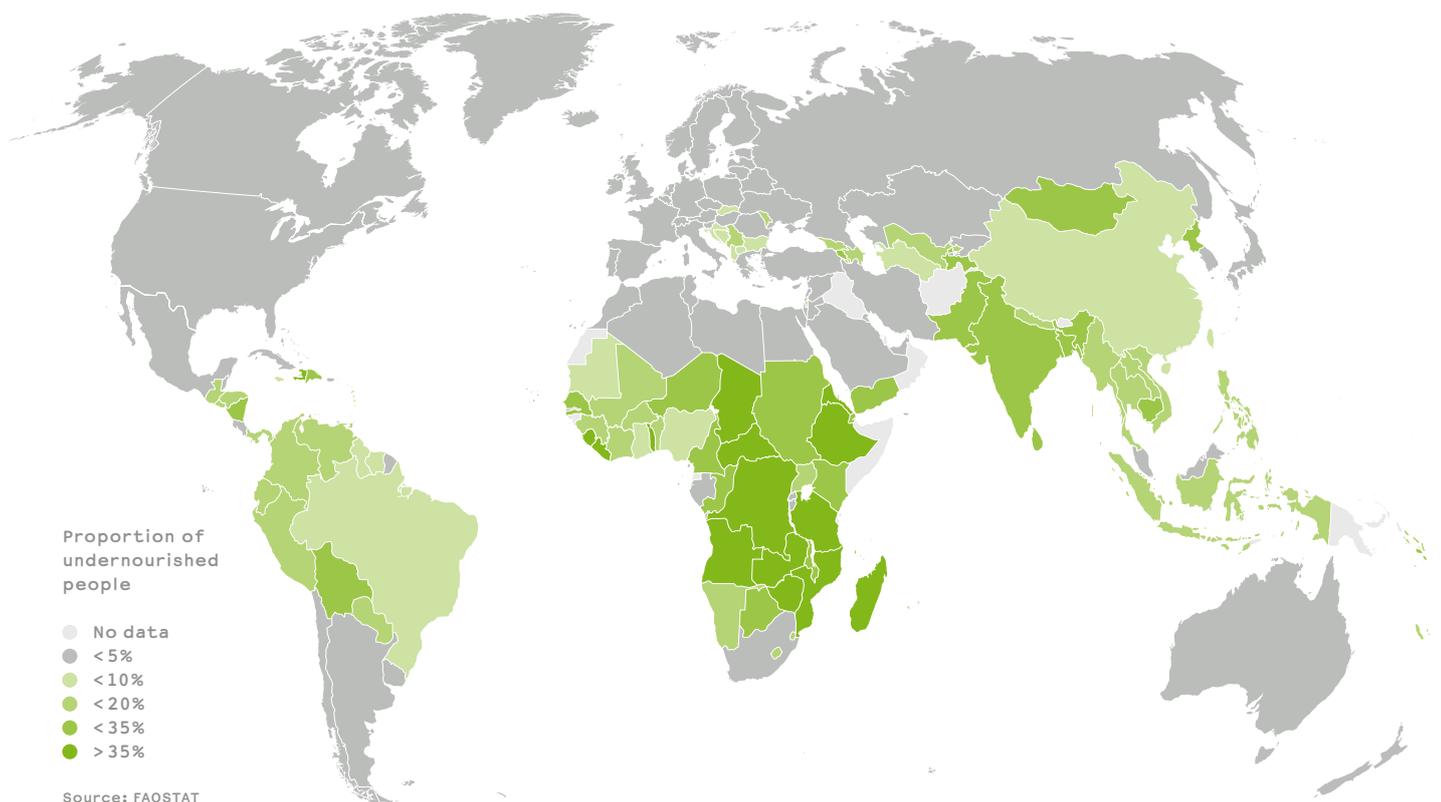
Unlike mineral wealth, food supplies are replenished and, in principle, inexhaustible. However, population increases and changing consumer habits threaten supplies for millions of people. Günter Hemrich, Programme Coordinator at the United Nations Food and Agriculture Organization: "The numbers of undernourished have soared due to high food prices." Hemrich notes that Central Africa has been worst hit, although most of the people afflicted by famine live in Asia. Because the population is growing and meat consumption rising, food production will have to double in the next 40 years, a target that can be achieved by increasing productivity and arable land acreage.

For Dr. Manfred Kern, Head of International Business Relations at Bayer CropScience AG, biotechnology holds the key to the solution. The greatest potential lies in seed improvement, but climate, water, foodstuffs and pest control also play a crucial part. Dr. Kern points out the need for urgent action because it takes ten to 15 years to improve seed quality.

Professor Franz-Theo Gottwald, theologian, philosopher and Director of the Schweisfurth Foundation, doubts that green genetic engineering is the cure-all. His view is that "the promises won't hold good for each and every yield period." We need multifunctional rural development and lifestyle changes if we are to overcome the future challenges. "It isn't about quantity, it's about distribution." But, ultimately, each of us bears some share of the responsibility. The first step is to change our own habits as consumers and eat less animal protein: "It should account for 20% of our food intake at the very most."

World famine?

The global situation further deteriorated despite excellent harvests in 2009. Worst hit are the poorest countries. The situation in Africa gives particular cause for concern.



How will we meet our energy demand?

Long-termism is needed to create the right energy mix. Professor Claudia Kemfert (head of the Energy, Traffic and Environment Department of the German Institute for Economic Research, Berlin): “We can’t change our energy system overnight.” Since it takes about 40 years to research the technology and install the infrastructure, we should not wait for spiralling prices to signal an impending shortage. Renewable energies, Kemfert believes, will not feature to any significant extent until the middle of the current century. Fossil fuels will therefore continue to play a key role and Germany will be increasingly dependent on gas.

Karsten Smid, a Campaign Manager with Greenpeace, believes that the future energy mix will have to meet a number of criteria: it will need to be economical on resources, environment- and climate-friendly, ensure security of supply and involve minimum technical risk. It will also have to be economically viable and competitive. Smid, a climate-protection, traffic and energy specialist: “It will take a rapid transformation of our energy system to stabilise the climate”. We need to focus on boosting efficiency and increasing our use of renewable energies, particularly wind and solar power. Geothermal energy and hydroelectric power could also play a part in energy transformation.

According to Hermann Scheer, President of EUROSOLAR and a winner of the alternative Nobel Peace Prize, this transformation could take place more quickly than current scientific scenarios would lead us to believe. He noted: “We have all underestimated the rapid pace of development in the renewables field.” If the current trend persists, all our energy could come from renewable sources in as little as 35 years from now. “The potential is there; we just have to tap into it using technical means.” At the same time, Scheer warned of the dangers of procrastination: “Failure to act now could cost us dear in the future.” If we wait too long to make the necessary changes, we will fall into any number of energy traps.

Scheer cites Germany as a renewables role model globally, acknowledging, however, that Denmark, with its greater use of combined heat and power generation, has chosen the better path where fossil fuels are concerned. He does not regard the expansion of nuclear power or carbon capture and storage technology as viable alternatives.

Can conflicts over raw materials be prevented?

Shortages of raw materials hinder economic development and may destroy natural resources, one example of this being the cutting down of rainforests to make way for biofuel crops. Professor Michael Heise, Chief Economist of the Allianz Group, fears that the inherent discrepancy between the need to eke out natural resources and the need to tackle poverty could trigger future conflicts. “Competition for resources will escalate so that more international networking will be needed.”

Professor Johannes Müller SJ, who teaches at the Institute for Social and Development Studies of the Munich School of Philosophy, even fears the prospect of a cold war waged over raw materials. “Energy is fundamental in order to promote growth and reduce poverty.” Moreover, the fortuitous regional distribution of strategically important resources could spark conflicts that might, in turn, trigger secondary disputes over issues such as environmental migration.





“The central banks can deal with the financial crisis by printing money. Oil, on the other hand, is not something we can simply produce.”

Dr. Daniele Ganser

For Dr. Daniele Ganser, who researches history and peace studies at the University of Basle, Peak Oil marks the beginning of an arduous transition period. Ganser knows from past events that radical turning points always bring about a change of perceptions, the French Revolution and fall of the Iron Curtain showing that the underlying tensions are not always resolved without violence. Ganser is concerned that “the economic wars have already started, albeit under another name.” As proof of this, he cites the 2003 Iraq war and the war in Afghanistan, an important transit country for energy supplies. To prevent political wrangling and oil wars under another guise, Ganser believes: “We in Europe should address the issues openly, making it clear that we advocate a reduction in violence, sustainable developments and greater cultural tolerance between Christians, Muslims and Jews.”

 For further information
 on this issue:

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

Do we then have any hope?

Do we then have any hope of a smooth transition to a world where resources are used sustainably? Kemfert, an expert from the German Institute for Economic Research: “It will require a giant effort, but it can be done. We know, after all, where we should be heading.” However, we will have to change course on some issues and identify the opportunities. The road to sustainable energy is also a difficult one because market prices are not a true reflection of actual shortages. Kemfert: “This is a job for the politicians.” The economy cannot solve the problems single-handedly.

Müller is also confident: “I lived for many years in Southeast Asia, and saw how people dealt with problems there. That gives me grounds for optimism.” He also believes that raw material shortages may put beneficial pressure on cooperation and ultimately lead to a global sustainability deal. Müller perceives a need to persuade developing countries not to go down the same energy path as the industrialised world. “The next ten to 15 years will decide how energy is used in the subsequent 50.”

Allianz Chief Economist Heise thinks the onus is on government. Heise: “I think we’ll be able to avert disaster given the right policies.”

Director of foodwatch Bode also believes this is an issue for the politicians: “It can’t work without rules.” If justice is to be done in the global distribution of resources, we will have to rethink current assumptions about what is rightfully our due. It is clearly necessary to appeal to people’s individual sense of responsibility but, essentially, man is an economic animal. Bode: “If the market can’t get the price right through its own efforts, where the carbon issue is concerned for instance, it’s up to the politicians to create a framework”.

World Water Week — Getting adaptation right

Since climate change is going to alter the water balance in many countries, taking its toll on nature and the economy, effective water management is more essential than ever. At the 2009 World Water Week in Stockholm, the Munich Re Foundation, KfW Entwicklungsbank, the European Investment Bank and the World Bank examined ways of funding the water sector's adaptation to climate change.

What does changing the fodder of Kenyan cattle from grass to bush leaves have in common with the air conditioning on the London Underground? Both are ways of adapting to changing climate and meteorological conditions. However, there is one fundamental difference: if low rainfall means cattle do not have enough to eat, the animals die and farmers lose their livelihoods. Tube travellers, however, may have to sweat it out, but their existence is not under threat.

Experts believe poorer countries will feel the effects of climate change most acutely of all because of their heavy reliance on agriculture and their lack of developed social security systems. Changing precipitation patterns caused by rising average temperatures will increasingly result in extreme weather events like droughts and floods.

Mitigation measures such as swinging cuts in greenhouse gas emissions will not be enough to help the countries affected. Adaptation will also be necessary, the agricultural sector, for instance, having to adjust to the new conditions. However, it is difficult to plan adaptation measures and estimate the extent of the funding required in the absence of precise data on the regional effects of climate change. The World Bank, Oxfam and the IPCC believe that up to US\$ 70bn a year will be needed to finance essential infrastructure measures alone. The United Nations Development Programme puts the costs, including social security and disaster aid, at over US\$ 100bn per year.

Massive funding needed

The financial needs are enormous. However, according to the World Bank, a mere US\$ 1.2bn for adaptation measure is currently available, although far more has been promised. Time is running out. Experts believe that environmental conditions in areas like the Himalayas or the Andes will change so rapidly that it will be hard for humans and nature to keep pace.

According to expert opinion, many of the sources available to fund adaptation measures remain untapped. Apart from the familiar funding of education, infrastructure and disaster-prevention projects by donor organisations, the following options are possible:

- Loans for investments in infrastructure funded by the granting of concessions; microfinancing as a means of diversifying basic income (particularly where small-holders are concerned)
- Privately financed investment in agricultural technology, new crop species and desalination techniques



Children in Eritrea drink water collected in fog nets and piped to reservoirs — a project sponsored by the Munich Re Foundation up to 2007.



"World Water Week" in Stockholm, which is attended by around 2,500 delegates, is one of the leading global water forums. A speaker sets out sustainable solutions to the world's water problems.

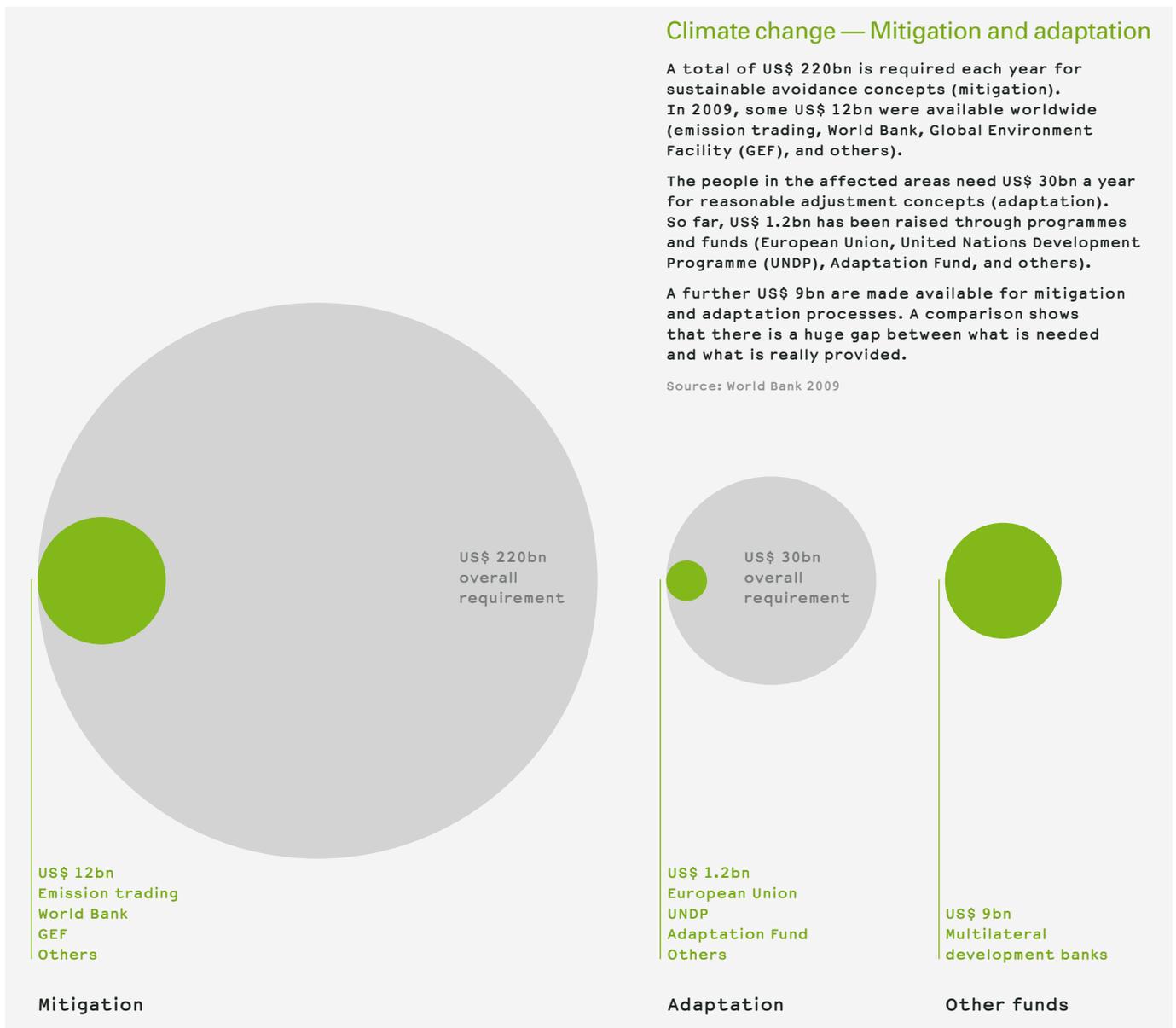
33 In addition, regional and local insurance instruments will be needed so that the risks can be transferred and the effects of extreme events mitigated.

To ensure adaptation measures take effect in the areas where they are needed most, we need better data on the effects global warming is having on local water balances. But time is short, and measures have to be planned right now, regardless of data uncertainties. International organisations like the World Bank will need to plan development measures and organise projects in ways that boost the water sector's resilience to the effects of climate change. Ideally, local measures will be based on existing strategies, promoting adaptation capacities at local level.

Minor adjustments with major impact

This means drawing on positive experience gained from existing projects instead of reinventing the wheel. If different sectors, such as water and agriculture, work together, the same goals can be achieved but more quickly and cheaply. Whilst it did not cost much for cattle farmers to change to a different animal feed, it gave them long-term security. This shows what can be done with a few minor adjustments, provided the local situation and population are taken into account. Sustainable economic growth is one adaptation measure that offers significant prospects, since it reinforces resilience to climate change and protects incomes.

For further information on this issue:
World Water Week
www.worldwaterweek.org



“Riskland” — Forewarned is forearmed

Risk awareness is key to identifying and assessing environmental risks. “Riskland”, a board game devised by the United Nations to be played by schoolchildren throughout the world, is now being translated into German with the help of the Munich Re Foundation.

The United Nations designed this interactive educational game to appeal to children, who are among society’s weakest members. It was originally intended for developing countries, where the young are increasingly exposed to emergency and catastrophe situations. The game is already available in English, Spanish, Portuguese, Creole, Thai, Nepalese and Cakchiquel, a Maya dialect. Together with the German office of the UNISDR (International Strategy for Disaster Reduction) in Bonn and Save the Children, we are currently preparing a German version, natural catastrophes being on the increase in central Europe too. Indeed, global warming in that region is causing not only violent storms and floods but also a higher incidence of frequent, intense heatwaves.

“Riskland”, an attractive package consisting of question and answer cards, texts and illustrations, helps reinforce the lessons children are taught at school about catastrophes and the environment. The game comes complete with a comprehensive booklet explaining what natural hazards are, what dangers they pose and why catastrophes are becoming more frequent, a close look being taken at the role of climate change.

One of the game’s main features is that it shows children and young people that they themselves can take responsibility. It uses realistic examples to illustrate how they should behave in an emergency or a catastrophe. They find out how to assess risks for themselves and take avoiding action where possible. After all, if preventive measures and warning systems fail, it is each individual’s awareness of the risks that determines whether he or she takes the right course of action and avoids loss. This is the idea behind “Riskland”.



Children in Trinidad and Tobago play Riskland, a board game designed to teach children about natural hazard risks.

UNISDR, the Munich Re Foundation and Save the Children are producing a German version of the game. It will be presented to the public in a joint media release scheduled for early 2010. Information on the game can be obtained from Christina Niederelz of Save the Children. The initial run of 250 games will be distributed to schools free of charge. For a free online version, visit:

www.savethechildren.de

www.munichre-foundation.org

www.unisdr.org



Tilly Smith

Girl’s heroic role

It makes sense to acquaint pre-school children with natural hazards, as the example of ten-year-old Tilly Smith shows: Vast areas of coast were devastated and over 200,000 people killed when South-east Asia suffered a tsunami in late December 2004. Tilly Smith, from the United Kingdom, was spending the Christmas holidays in Thailand with her parents. Tilly had learnt at school how tsunami waves are generated and propagated. When the sea suddenly retreated on that fateful 26 December, she was able to warn her family before the towering wave swept up onto the land. As a result, many of those in the immediate vicinity were alerted to the danger and over 100 holidaymakers managed to reach safe ground in time.

Further activities

 For further information
 on this issue:

 Germanwatch
www.germanwatch.org

“Climate expedition” schools project Still right on track

A key objective of the foundation’s work with schools is to demonstrate the impact of climate change and make young people aware of its implications.

The year 2009 marked the fourth anniversary of the foundation’s sponsorship of the Germanwatch/Geoscopia “Climate expedition” project. Pupils and teachers are as keen as ever to benefit from the wealth of information and learning aids the project provides, and demand remains high. In the course of the year, project days were held at schools and other educational establishments throughout Germany with the backing of the Munich Re Foundation.

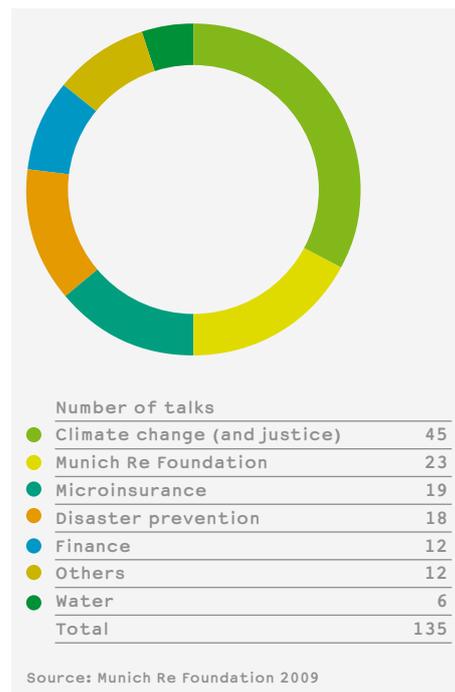
The expeditions are staged by experts from the renowned development and environmental organisation Geoscopia, who use live satellite images to show our constantly changing blue planet in a new light, a technique that brings scientific theory to life for the pupils. For instance, comparing past and present satellite images of melting glaciers or devastated rainforests highlights the way climate change is already affecting life on earth. It is easier to understand the links between the developments in the earth’s atmosphere and human activity and appreciate the full extent of the global impacts thanks to this bird’s eye perspective. The “Climate expedition”, an official Decade of Education for Sustainable Development project, remains well and truly on track.



Thomas Loster, chairman of the foundation, giving a presentation about “people at risk” in a secondary school in Munich.

Talks and presentations Munich Re Foundation 2005–2009

The foundation’s staff are frequently called on to give presentations to associations, committees, schools and clubs.





Heading towards collapse — The environment- migration nexus

Prof. Mohamed Hamza

While there is still a lot of work needed in terms of unpacking drivers of migration including environmental factors, in the meantime locations and hot spots around the globe are heading towards an irreversible tipping point of socio-environmental collapse.

Climate change will have a progressively increasing impact on environmental degradation and environmentally dependent socio-economic systems. The 2005 Millennium Ecosystem Assessment highlighted the fact that two billion people living in arid, semi-arid and sub-humid regions are extremely vulnerable to the loss of ecosystem services, including water supply. Societies which lack other coping mechanisms will have no option but to migrate. Data on the impact of rapid onset events on population displacement are disputed. We know little about the interplay between environmental change and migration. But the trend is unmistakable, with the greatest impact felt in the global south.

One estimate contends that, from 1980 to 2000, 141 million people lost their homes in 3,559 natural hazard events, of whom over 97% lived in developing countries. Two case studies in Bangladesh and Kenya currently form the basis of a research project conducted by the Stockholm Environment Institute, Oxford, to look into the interaction between multiple-drivers and their impact on potential humanitarian crises leading to population movement.

In Bangladesh, the coastal area of about 710 km, where more than eight million people live, is protected by embankments and polders. They keep the land safe from tidal flooding, but these areas remain vulnerable to frequent cyclone, storm-surge, and tidal intrusions. It is widely recognised that climate change may strongly aggravate this situation. An analysis of tidal data collected during 1975–2005 reveals that the mean sea level is rising in observed ranges from some 5–7.4 mm per year. A large proportion of the local population, who depend on natural resources, will be affected. With projected sea level rise of 32 cm and 88 cm, the coastal cultivable land will be reduced from 45% at the current level to 40% and 15%. People will have to move into other areas where, by nature in Bangladesh, population pressure is already high. They move into an uncertain future.

Climate change also poses a serious challenge to Kenya's development. Drought is probably the most prevalent climatic hazard, affecting about 70% of the country categorised as arid and semi-arid lands. Kenya experiences drought in a cyclic pattern. The major droughts come every ten years while the minor ones occur every three to four years. Migration, and specifically the movement of pastoralist communities, has persisted for many years as a form of coping strategy, but the lack of rainfall in places which people previously used as escape zones is clear evidence of new uncertainties in climate and of the impacts for marginal livelihoods. This has led to complete movement and migration to other urban centres and other countries with no return to original homes. This accelerates a challenging global trend: the growth of cities and megacities including slums and, at the same time, an exodus of the rural population.

Although it is extremely difficult to justify predictions of future patterns of climate-induced migration, the boundary conditions are far from promising. Today, most science estimates still concentrate on the numbers of people at risk rather than the number of people effectively likely to move.

Locations and hot spots that are heading towards an irreversible tipping point of socio-environmental collapse today could benefit from strengthening the adaptive capacity of affected populations, from the removal of barriers to internal mobility, and by greater attention being focused on urban planning, service provision and human security in areas to which people are already migrating. Furthermore, we have to enhance the capacity of urban labour markets to absorb large migrant populations as well as to identify and map the historical migration trends and monitor the potential tipping points.

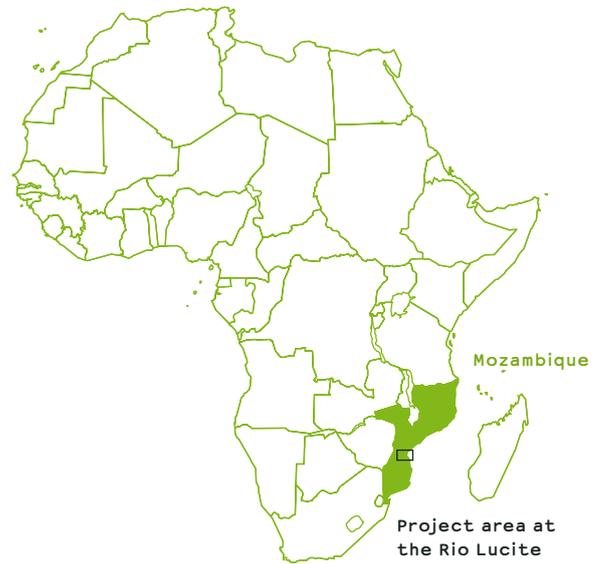
Finally, a continuing high-level dialogue is needed in order to develop, strengthen and harmonise international understanding of concepts, knowledge base, vocabulary and experience related to the multiple cause-effect links and feedback loops between environmental degradation, socio-economic impacts and environmentally-induced migration.



Professor Mohamed Hamza is a professor at the Stockholm Environment Institute in Oxford. An expert on crisis management and social vulnerability, he trains people in crisis areas in Afghanistan, Sierra Leone, Liberia, Nigeria and elsewhere.



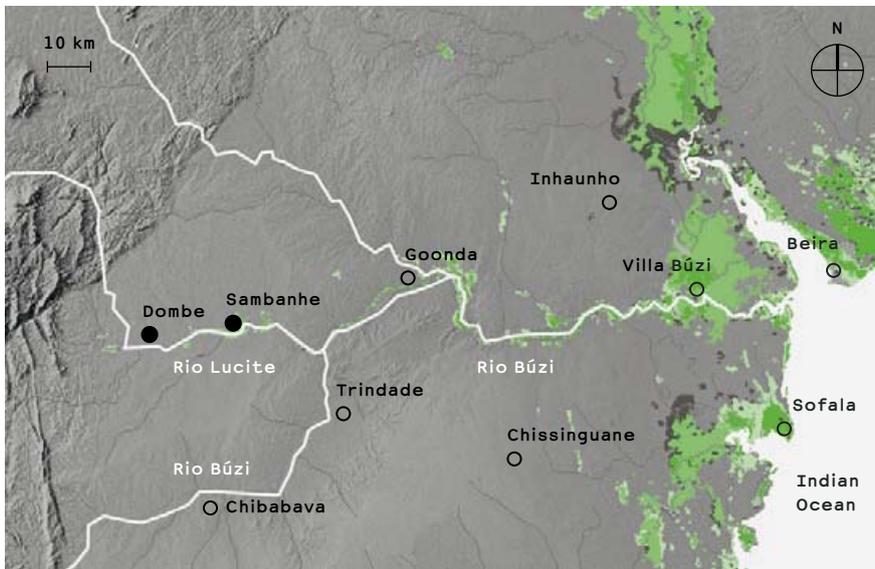
Mozambique flood-warning system A model project



Top left: Mozambique suffers frequent floods. This photo was taken in January 2008.

Bottom left: Villages on the Lucite, a tributary of the Búzi, take delivery of a lifeboat that will make flood rescue easier even in this remote region.

Top right: Practice drills were organised in villages on the Búzi and Save in November 2009 to prepare people for the rainy season.



Flood-prone areas in Central Mozambique

The early-warning systems on rivers in Central Mozambique were extended in 2009. Dombe, Sambanhe and other villages on the upper reaches are now linked to the system.

- Flood-risk areas
- Communities new to the scheme

Source: Brakenridge, Dartmouth Flood Observatory

Now that the Búzi and Save early-warning systems are fully operational, Mozambique is planning to launch another project with United Nations backing. A further development in this area is a new manual giving useful advice on how to set up systems of this type.

Once the local communities had taken control of the Búzi and Save systems in Central Mozambique, the object for 2009 was to close any gaps. This initially involved extending the scheme to include smaller rivers that can quickly rise and burst their banks. Accordingly, in March 2009, gauges were installed on the River Lucite and River Mussapa, with the full support of the local villages and their chiefs, to ensure flood waves can be more closely monitored. In addition, a meteorological and gauging station was set up in nearby Dombe. The object was not only to deal with the technical aspects but also to train the local inhabitants so that they would be ready to deal with emergencies.

Setting up new, locally run warning points further reduces the threat posed by flooding, bringing us nearer to our goal of protecting those exposed to risk as much as possible. In March, the villages along the River Lucite were given emergency equipment and a lifeboat. In November, before the start of the rainy season, an emergency drill was carried out, and this large-scale simulation exercise showed that the villages are well prepared.

The project was vetted by the Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) and given top marks. The GTZ has therefore decided to continue participating in the early-warning project in conjunction with the German Federal Ministry for Economic Cooperation and Development. Furthermore, in the light of this positive experience, Mozambique's disaster-prevention authorities have applied to the United Nations Development Programme (UNDP) for an early-warning system to be installed on the River Licungo in northern Mozambique. The matter is currently under negotiation.

Early-warning blueprint

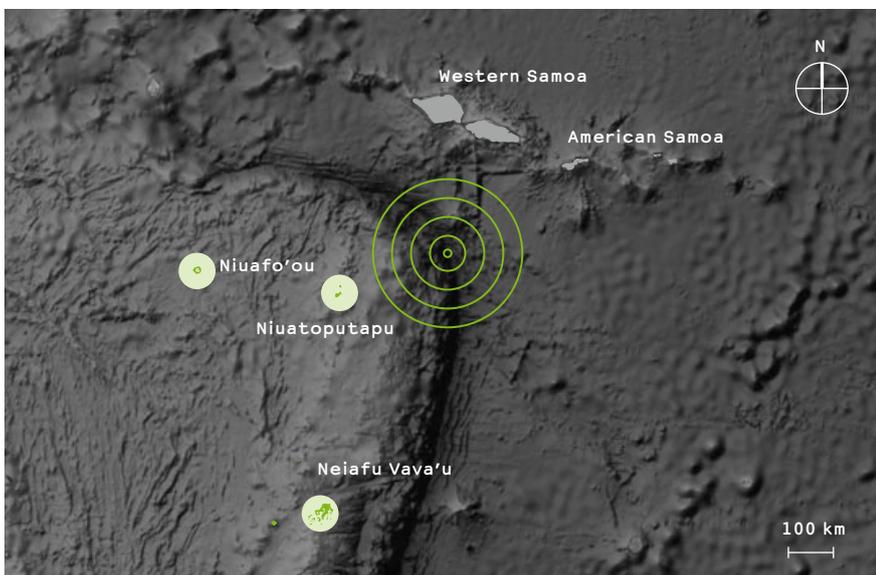
Drawing on the experience it has acquired from the Búzi and Save projects, the Munich Re Foundation has published "How to build up people-centred early warning", a manual giving useful advice on setting up early-warning systems of this kind. It provides practical, step-by-step instructions on the various project phases and deals with aspects such as developing people's awareness, the structural set-up of an early-warning system, training, risk monitoring and installing the technical equipment. The manual also gives pointers on catastrophe-simulation exercises, instrument servicing, updating the readings and ensuring an orderly handover to the local authorities. Initially conceived for the benefit of people working on the Mozambique projects, the Portuguese version is already available. Plans are going ahead to publish an English version so that the information will be more widely accessible for use in early-warning systems around the world.

Tsunami hits Tonga— Why the early-warning system failed

The South Pacific kingdom of Tonga, comprising over 150 islands, is regularly hit by tropical cyclones, severe storms and floods. It is also prone to earthquakes and tsunamis. In fact, the region was only recently in the headlines due to a number of severe natural catastrophes.

On 20 March 2009, a magnitude 7.9 earthquake occurred just 200 km southeast of Tonga, triggering a tsunami warning although, in fact, no loss or damage would have resulted. However, this was not the case on 29 September 2009, when the Pacific's most severe seaquake to date (magnitude 8.3 on the Richter Scale) occurred south of Samoa (see map). The subsequent tsunami caused major loss and claimed over 140 lives in Samoa and American Samoa.

The island of Niuatoputapu in the north of Tonga, with 1,000 or so inhabitants, suffered heavy losses when it bore the full brunt of a 1.5-metre-high wall of water. Houses were swept away, cars washed into the sea and infrastructure destroyed. Nine people were killed. There were no casualties on Tonga's more remote Ha'apai island group, where an early-warning system has been installed, but a hospital, a school and a large number of low-lying areas nevertheless suffered heavy flooding.



2009 Samoa earthquake

On the morning of 30 September an 8.3 magnitude seaquake caused a tsunami which struck Samoa and Tonga: an acid test for the newly-installed RANET warning system.

Source: Google Earth

Was there a breakdown in the early-warning system?

The RANET 24-hour warning system, set up in recent years with the backing of the Munich Re Foundation, is based on high-frequency (HF) technology. It is, thus, less dependent on the unreliable satellite installations generally found in the region. Unfortunately, RANET has so far been installed in only three areas of Tonga, on the southern islands around the capital, but not in remote Niuatoputapu. Although the warning system did function, it was not able to prevent loss because the first tsunami wave reached the Samoan Islands and Niuatoputapu within minutes of the tremor.



Top: Leala Lonae from the village of Poutasi, Samoa, lost relatives to the massive tidal wave. A total of 170 people died in Samoa and Tonga.

Bottom: Helpers clear up the devastation left behind by the tsunami. Niuatoputapu, in the north of Tonga, and the more distant Ha'apai group were among the islands hit.

Human early-warning factor

Apart from technical parameters affecting Tonga's situation, such as slow data transmission, the human factor plays a crucial part in any early-warning system. The Samoa quake occurred at 6.48 a.m., before staff had arrived for work at Tonga's transmission centres, television stations and the other public facilities normally responsible for sounding the alert. Consequently, having more RANET stations would not have made much difference to the situation on 29 September.

Nevertheless, the tsunamis that occurred in 2009 underscored how important it is to have a well-organised, comprehensive warning system. It is to be hoped that the RANET system will be extended over the entire Kingdom of Tonga as soon as possible, helping prevent losses when future events strike.

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	<p>2008 report Date of publication 03/2009 Order numbers German: 302-06042 English: 302-06043</p>		
Conference report	<p>Microinsurance Conference 2005 Making insurance work for the poor: Current practices and lessons learnt Date of publication 06/2006 Order number English: 302-05046</p>	<p>Microinsurance Conference 2006 Making insurance work for Africa Date of publication 06/2007 Order number English: 302-05381</p>	<p>Microinsurance Conference 2007 Making insurance work for the poor Date of publication 04/2008 Order number English: 302-05491</p>
	<p>4th International Micro- insurance Conference 2008 Making insurance work for the poor Date of publication 04/2009 Order number English: 302-06092</p>		
IntoAction	<p>IntoAction 1 Microinsurance Making insurance work for the poor Date of publication 01/2006 Order numbers English: 302-05002 French: 302-05003 Spanish: 302-05004</p>	<p>IntoAction 2 Flood-warning system in Mozambique, completion of the Búzi project Date of publication 06/2007 Order numbers German: 302-05421 English: 302-05422</p>	<p>IntoAction 3 Early-warning communication system for the Kingdom of Tonga Date of publication 12/2009 Order number English: 302-06251</p>
welt-sichten	<p>"welt-sichten" magazine Climate change and poverty A challenge for a fair world policy Dossier of the climate change and justice project Date of publication 05/2008 German and English</p>		
Books	<p>Protecting the poor A microinsurance compendium Date of publication 11/2006 Order number 302-05140 Text in English 654 pages ISBN 978-92-2-119254-1</p>	<p>Protegiendo a los pobres — Un compendio sobre microseguros Date of publication 05/2009 Text in Spanish 692 pages ISBN 978-84-96780-72-9</p>	<p>Protéger les plus démunis — Guide de la micro-assurance Date of publication 10/2009 Text in French 747 pages ISBN 978-92-2-219254-0 (OIT)</p>
	<p>Protégendo a população de baixa renda —Um compêndio de microsseguro Date of publication 11/2009 Text in Portuguese 639 pages ISBN 978-85-7052-513-0</p>		

19 January, 21 February, 18 March, 29 April
 Dialogue forums "World in flux – The forgotten billions"

24 January, 28 February, 21 March
 Discussion series "The world upside down – For a new world risk community" in association with Allianz Kulturstiftung, the Münchner Kammerspiele and Süddeutsche Zeitung

5–7 March
 Conference "Micro-finance – Giving people the opportunity to find their own way out of poverty?" in cooperation with the Tutzing Evangelical Academy and the KfW Entwicklungsbank

July 2010
 Third CCEMA Expert Workshop "Environment, Climate Change and Migration"

25–30 July
 Fifth International Conference with the topic range of "Fog, Dew and Fog Collection" at University of Münster

25–31 July
 Fifth Summer Academy discussing "Protecting environmental migrants" at Hohenkammer Castle

September 2010
 Publication of final report to the project "Climate Change and Justice"

9–11 November
 6th International Microinsurance Conference in Manila, Philippines

2009 environmental review

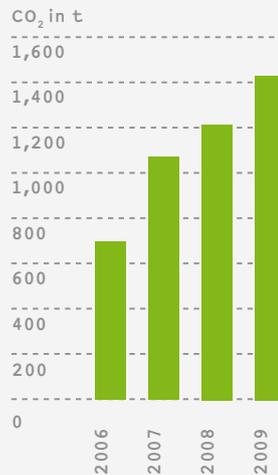
Each year we draw up an environmental review. Here we show how CO₂ emissions occur as a result of our foundation's work and how we can offset these in order to remain climate-neutral. The Munich Re Foundation deals in many of its projects with climate protection and plays a proactive role here.

In 2009, some 1,400 t of CO₂ were emitted, an increase of 16% (around 190 t) on the previous year. International foundation events, above all the International Microinsurance Conference in Dakar, Senegal, accounted for the bulk of these. The greater distances travelled by participants not only to the Microinsurance Conference but also to the Summer Academy were responsible for the increase in emissions. The number of business trips by foundation staff remained constant.

We offset our climate-relevant emissions by purchasing CO₂ certificates from high-quality climate-protection measures to at least verified emission reductions (VER) standard. So far, we were able to support projects in Guatemala, India and Eritrea. In 2009, we decided to sponsor a project in South Africa: Soil & More Reliance Cape Town Composting.

A composting plant near Cape Town in South Africa operates using innovative recycling techniques. Organic material is processed in line with UN criteria (United Nations Framework Convention on Climate Change) in a way that reduces levels of methane emissions that normally occur in standard composting processes. The humus produced is used for regional agriculture. As the humus is rich in nutrients, plants can root more easily and the vegetation grows faster. This prevents erosion and allows the groundwater level to stay high. As there is less need for additional irrigation, it also saves water. Besides these ecological advantages, the project has also created 55 long-term jobs in the region and has thus become a valuable employer. Local living conditions can thus be improved sustainably.

The foundation's projects are becoming increasingly networked, with more and longer routes. The increase in CO₂ emissions is largely due to such business trips.



Climate-protection project with many levers: We offset our emissions by purchasing CO₂ certificates from a composting project in South Africa. Valuable humus soil prevents erosion and falling groundwater levels.



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From Knowledge
to Action