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## 1 Success stories and anxious moments

The foundation's second year was, to a large extent, devoted to consolidating the projects launched in the previous year. Significant progress has been achieved, for instance in transforming our microinsurance conference into an international platform, microinsurance being an issue that is assuming growing importance in many countries (page 16). Our disaster management work has also borne fruit, while research into different aspects of social vulnerability forms an ever denser and more widespread network (page 6). The foundation covers a broad spectrum, sponsoring ten projects in all, some of them interrelated.

However, last year was not without its anxious moments. On a positive note, the new District Administrator responsible for the River Búzi gave his blessing to the Mozambique flood-warning system, pledging continued support (page 34). On the other hand, new directives and laws cast a shadow over the future of the Eritrean fog nets project coordinated by the WaterFoundation (page 36).

In the meantime, although at this stage it is very difficult to say precisely when the Tonga early-warning system project will be in operation, we are hoping for a 2007 launch (page 38).

The dialogue forums have now become an established part of the foundation's work on the local level. We will continue to organise them in the future in order to raise public awareness of issues that concern the foundation (page 26). In support of the UN Decade of Education for Sustainable Development, we are expanding our involvement with schools (pages 24 and 25) on the national level. To raise our international profile, our overseas projects will for the time being focus on disaster management and water as a resource and risk factor as we continue to be active primarily in Africa.



Thomas Loster  
Chairman of the Munich Re Foundation

March

13–15 March  
Strategy meeting  
of UNU Chair network:  
Defining 2006–2009  
research strategy for  
social vulnerability,  
in Yautepec, Mexico

Page 6

27 March  
First Munich Re Founda-  
tion prize awarded:  
€50,000 presented to the  
Kingdom of Tonga’s  
optimised storm-warn-  
ing system at the Third  
International Conference  
on Early Warning in  
Bonn

Page 38



1



2

April

26 April  
The winners of the  
schools competition  
“Young people with  
boundless energy –  
Protect the climate!”  
organised in conjunction  
with Zeitbild Verlag in  
Berlin

Page 24



3

July

23–29 July  
First Summer Academy  
on social vulnerability  
staged with the United  
Nations University (UNU)  
at Schloss Hohenkammer  
near Munich

Page 8



4

August

22 August  
“Climate and water-  
related risks” seminar  
held at the Stockholm  
Water Week 2006

Page 39



5

September

21 September –  
28 November  
Dialogue forums “The  
risks of living in Munich –  
Perceived and actual”,  
co-organised by the  
GSF – National Research  
Center for Environment  
and Health, held at the  
Bavarian State Library in  
Munich

Page 26



6

October

29 September –  
18 December  
Germanwatch “Climate  
expedition”, at schools  
in North Rhine-West-  
phalia and Bavaria

Page 25

Commissioning of the  
Búzi flood-warning  
system, handover of  
a water level gauge on  
the river

Page 34

November

21–23 November  
Second International  
Microinsurance  
Conference “Making  
insurance work for  
Africa” in Cape Town,  
South Africa

Page 16

Publication:  
Protecting the poor –  
A microinsurance  
compendium

Page 18



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9



10

# Research

One of our core objectives is to research the vulnerability of people in risk situations. The photograph shows the inhabitants of Choluteca, Honduras, surrounded by what remains of their homes following a hurricane. Supplying water to people affected by natural catastrophes is always a critical issue.

The concept of vulnerability is very high on the agenda at the moment. It originally came up in the 1980s in the environmental, social and engineering sciences context, and now current research in this field focuses on three areas – ecology, society and technology. It owes its popularity to its close association with the discussion about the risk society. As a result of ecological, technological and sociological developments, more and more people believe themselves exposed to new risks, some of which threaten their very livelihoods, and many wonder what they can do about them. “Living with risk” is therefore a key concept in terms of how we deal with potential risks, such as natural catastrophes.

#### Threat and prevention

The concept of vulnerability always has two aspects: the nature and degree of threats in the global risk society and how not only people but also ecosystems and technical structures cope – or fail to cope – with them. In essence, social vulnerability is a dual structure consisting of an outer facet, indicating the degree of danger, and an inner one, reflecting the possibilities that the people affected have of living with or surviving it. (Figure 1)

The degree of vulnerability results from the interaction between the two. It is always particularly high when considerable danger potential is combined with a limited capacity for coping and adapting. On the other hand, vulnerability is low if a minor degree of threat is matched by a high capacity for adaptation. If that is the case, we can talk about security. (Figure 2)

Let us concentrate on social vulnerability. How can the fraught relationship between social vulnerability and human security be determined and measured? Are there certain constellations in which the existential threat outweighs man’s ability to act? How can the threats themselves be reduced? What circumstances help or hinder human ability to live with risks? What groups are particularly vulnerable and in what parts of the world? How can we strengthen people’s ability to adapt to and cope with threats such as natural catastrophes? And what factors actually make up human security?

#### Research – Three missing elements

A great many research projects and development programmes already address these issues. Despite an almost overwhelming abundance of detailed information, there are three missing elements:

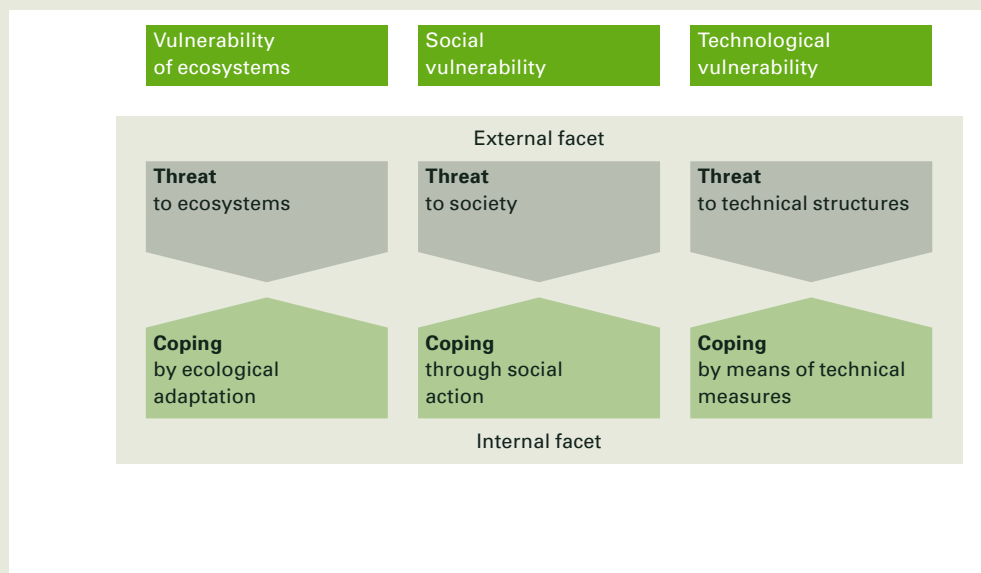
- A systematic breakdown of the various aspects of vulnerability that takes sociological theories into account
- A specific study of those aspects with the aid of empirical research in a particularly high-risk context, such as natural catastrophes
- An attempt to find vulnerability or human security indicators which enable us to make generalisations and to measure and predict social vulnerability as far as possible

## Prof. Hans-Georg Bohle Social vulnerability: Learning to live with risk

Figure 1

Dual vulnerability structure: The external facet, which shows the degree of danger and the internal, which shows the capacity of the people concerned for coping and adapting.

Source  
Hans-Georg Bohle, 2006







**Prof. Hans-Georg Bohle**

The Professor has occupied the Chair of Cultural Geography and Development Geography at the Department of Geography, University of Bonn, since 2004. He was appointed to the Chair on Social Vulnerability at the United Nations University (UNU-EHS), which is financed by the Munich Re Foundation, for the academic year 2006/2007.

The holders of the Foundation Chair on Social Vulnerability are seeking answers to these issues alongside scientists at the United Nations University, examining theoretical approaches that could explain social vulnerability for systematisation purposes. Scientific papers reveal the complex interrelationships involved and endeavour to formulate general approaches to social vulnerability in the form of models.

In the fieldwork area, the annual summer academies organised at Schloss Hohenkammer by the Munich Re Foundation and UNU-EHS and presided over by the holders of the Foundation Chair provide an opportunity to compare and discuss current papers on selected problem areas by top doctoral candidates from around the world. The 2006 Summer Academy addressed the issue of vulnerability in the context of global water crises. The main item on the agenda for 2007 is megacities. Looking further ahead, the topics planned for 2008 and 2009 are the international refugee issue and global climate change, respectively.

One of the concerns of the annual UNU-EHS Expert Working Groups, to which the Chairholders also contribute their expertise, is how to remedy the lack of indicators and models that can be used to measure vulnerability.

Work on all aspects of social vulnerability has shown that "living with risk" needs to be based on coping strategies and adaptation techniques. The main objective with regard to the most vulnerable population groups in high-risk areas is to analyse their capacities and options as accurately as possible in order to provide appropriate help and support. Furthermore, it has often been found that intangible factors make it easier for the poorest of the poor to live with risk. For example, their ability to prevent or cope with risks often depends on rights of access to land and other natural resources.

At the same time, education and health play a very important part in the ability to successfully adapt to risks. Social networks, family ties, self-help groups, friends and acquaintances, neighbourhood associations and savings clubs often constitute the main insurance mechanisms.

**Human security and quality of life**

On the other hand, human security goes far beyond such aspects as physical well-being, food and health hygiene, adequate accommodation and help in need. Human security also depends on the social standing of those concerned within the community. This is related to the various opportunities for self-determination and involvement in decisions on how to deal with risk. Ultimately, the deciding factor is to what risk prevention and risk management rights people have a claim in society.

The scientific study sponsored by the Munich Re Foundation aims to apply the findings in such a way that the most vulnerable are able to live with risk by their own efforts and in accordance with their own ideas. That there are no patent recipes quickly became apparent. Tailored solutions are called for, based on the social, political, economic and, not least, cultural context.

**Figure 2**

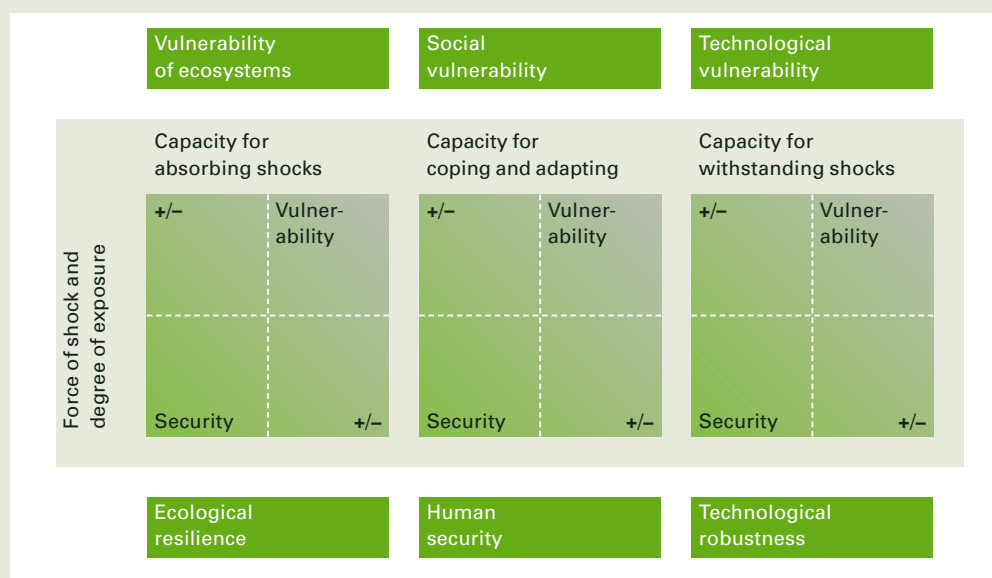
Factors that determine vulnerability and security: The degree of vulnerability results from external and internal parameters. A key component is the resilience of the people affected or their ability to deal with the impacts.

Vulnerability:



Low

Source  
Hans-Georg Bohle, 2006



## Pioneers of research

### Interview with Dr. Koko Warner

Dr. Koko Warner is an academic officer at the Institute for Environment and Human Security of the United Nations University (UNU-EHS). In this capacity, Dr. Warner also serves as scientific adviser and coordinator for the Chair on Social Vulnerability, established by the Munich Re Foundation in 2005 in order to provide training for international students in the various aspects of disaster management and prevention.

The concept of social vulnerability has existed for some time. What has sparked the renewed interest in researching this topic?

Social vulnerability arises out of deficits – financial, institutional or knowledge deficits. The main elements of past research have focused on how people best deal with the risks. In my view, there are basically three important reasons for looking at the issue from a different perspective. First, we need to analyse which people are most at risk and in most urgent need of help – not just when a natural catastrophe or another dreadful event strikes but at any time. Secondly, human organisations are extremely complex. To understand them, we need a multidisciplinary as opposed to a monodisciplinary approach. Thirdly, research into social vulnerability should not be devoted solely to structural measures for minimising risks such as building stronger dams.

What distinguishes research into social vulnerability from other disciplines?

It puts people at the centre. The major challenges of the 21st century – lack of clean water, inadequate healthcare, climate change and more severe natural hazards – require swift action. The United Nations' Millennium Development Goals include reinforcing society's resilience and improving living conditions for particularly vulnerable groups. In terms of these goals, people, their social systems and their environment are inseparably linked so that they can live a life free of fear, risk and want.

Your work for the Foundation Chair involves coordinating a network of outstanding scientists. What challenges does that pose?

As with all forms of multidisciplinary cooperation, and particularly with a team of professors, there are challenges as well as advantages, starting with the quest for appropriate work definitions and methods. We do our utmost to find solutions that can be applied in complex situations and also used in another context. The work offers excellent opportunities for being innovative – scientifically and in practical terms.

#### Dr. Koko Warner

An economist who comes from the USA and assists the Chair-holders at the UNU-EHS in Bonn in a coordinating role. After several years of research, she will pass on her knowledge to young academics.



### Where do you see yourself in five years' time?

Social vulnerability has many facets. They include gender justice, education, finance and social hierarchies as well as the different cultural values, risk perceptions, and resistance levels of the various societies. It will probably take at least five years to deal with the issue in its full complexity. The Chair gives me a unique opportunity to work with scientists of international repute. I look forward to being able to pass on what I have learnt here about social vulnerability and research approaches in that area.

### What stage will vulnerability research then be at?

In five years' time we should have a fairly accurate "world map" of social vulnerability. It will show the hotspots, the main causes, and the widely accepted solutions for reducing social vulnerability. If, in addition, we manage to achieve a common understanding of this issue, that will have been an enormous step forward.

### In retrospect, what experience did you find most moving at the 2006 Summer Academy?

There were many special moments. I remember, for instance, participants in voluntary working groups continuing the discussions until well into the night, and another occasion where a Chinese student noted that her opinion was taken seriously in spite of her youth. It was particularly pleasing that participants stayed in touch after the Summer Academy and offered one another encouragement in their research. The Summer Academy also gave many experienced post-doctoral researchers added stimulus for their work – they considered it a privilege to have been involved.

### What is the exact nature of the work with the students?

Often the scientists, whether PhDs or graduates, are performing pioneering research. They are familiar with the latest social vulnerability literature and have experience of current activities in this field. Working with these young scientists helps to focus our research. In turn, the benefit for them is that we open up wider horizons and put things in an overall context. We also help doctoral candidates to establish contacts with other institutions and scientists – something that may not have been possible to the same extent in their own faculty. In this way, the Summer Academy and Foundation Chair on Social Vulnerability constitute a platform for a multi-disciplinary, scientific approach to the issue.



#### Top

Climatologist Dr. Tom Downing in discussion with Prof. Hans-Georg Bohle, an expert on poverty issues. The sharing of expertise across disciplinary boundaries opens up new perspectives.

#### Bottom

Prof. Janos Bogardi, Director of the United Nations University in Bonn, discusses the concept behind the Chair. Four outstanding scientists are engaged in joint research over a period of four years, each in turn occupying the Chair on Social Vulnerability.

## Vulnerable but not defenceless

### 2006 Summer Academy

Some 25 young scientists and high-ranking experts who attended a week-long Summer Academy at Hohenkammer near Munich discussed the social vulnerability problems encountered at times of natural catastrophe. The Academy, founded by the United Nations University (UNU) and the Munich Re Foundation in 2006, will continue to promote research in this field.

Whether they live in traditional rural structures or in megacities, people are becoming more socially vulnerable to the forces of nature and increasing scarcity of resources. And because the perception of risk varies widely from region to region, there is great need for research. We can avert the worst consequences of natural catastrophes and save lives only if we are able to build up the resilience of social systems to catastrophes and improve human security.

**Sustainable disaster mitigation has to take into account the sensitive structures of the social system.**

The importance of this issue has been all too tragically demonstrated in recent years. 2005 went down in history as the most catastrophic year on record after hurricanes such as Katrina, Rita, and Wilma had cut a swathe of devastation across the USA and the Caribbean and severe earthquakes had left tens of thousands dead. Huge areas were laid waste by tsunamis in 2004 and 2006. Since an understanding of the interaction between man, resources and natural hazards is crucial to our future, the United Nations University in Bonn and the Munich Re Foundation have set themselves the task of encouraging and expanding global research in this field.

With ten professors and 25 young scientists, the first ever Summer Academy on this topic constituted an interdisciplinary platform. It took place between 23 and 29 July 2006 at Schloss Hohenkammer near Munich, and offered PhD students from Brazil, China, Ecuador, Germany, India, Mexico and the USA an ideal forum for exchanging knowledge and for networking.

The event focused on water and was entitled "Water-related social vulnerabilities and resilience-building". Participants addressed issues such as safeguarding water supply and sewerage facilities, flood and drought, poverty and the lack of risk perception. Particular emphasis was laid on interdisciplinary analysis and the quest for appropriate ways of improvement. Prof. Janos Bogardi, Director of the Institute for Environment and Human Security of the United Nations University,

noted that sustainable disaster mitigation measures would work only if they took into account the sensitive structures found within a social system, with its complex inter-relationships and reaction mechanisms.

Prof. Úrsula Oswald Spring of the National University of Mexico, holder of what is currently the only Chair on Human Security, stressed that, despite in some cases major cultural differences, societies encountered the same basic problems time and again. "Women, the elderly and children are the most common victims of catastrophe. In many countries they survive only because the women have formed solidarity networks. Politicians also need to invest in this area if we are to reduce the vulnerability of families, villages and entire regions."

The initiators see the Summer Academy on social vulnerability as a major driving force behind the increasingly vital field of vulnerability research. However, the Academy had to be more than an intellectual exercise. It should help identify solutions for people in risk situations and stimulate politicians to take account of the issues in their decisions.

#### Top

Prof. Bogardi explains the objectives of the United Nations Universities.

#### Bottom

Young scientists from four continents describe the experiences they have gained from local projects.



## Ten pillars of social vulnerability

A number of workshops at the 2006 Summer Academy addressed key social vulnerability issues. The ten pillars set out the items on the research and action agenda and define what the vulnerability research priorities should be.

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### Science

#### A common understanding of vulnerability

Research requires clear definitions and a sound theoretical foundation and consideration of the spatial, temporal, and socio-economic context. Significant research gaps exist today.

#### Usable science

Conducting social vulnerability research reaches beyond academia and affects how practitioners and policy-makers work with vulnerable populations. Social vulnerability research can be strengthened to move beyond description to more powerful analysis with usable, practical, and significant application possibilities.

#### Measuring and analysing vulnerability

The tools for measuring social vulnerability can be further sharpened. Solid qualitative and quantitative methods are needed to facilitate decision-making and action related to social vulnerability reduction.

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### Public awareness

#### Complexity

Social vulnerability is a mosaic of interacting systems (environment, social, and economic hazards). Yet complex issues must be presented coherently to maximise public understanding.

#### Education

The public needs straightforward information, and opportunities to learn about the roots of and possible solutions to social vulnerability. Practical tools and knowledge can positively shape vulnerability-reducing behaviours and community action.

#### Media

The media provide a bridge between science and society, and signal the significance of social vulnerability to policy-makers. The media can play a significant role in raising awareness of the distribution and causes of social vulnerability by telling the stories of vulnerable people.

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### Policy implications

#### Involvement

Involve the communities considered in vulnerability studies. Participatory research and action are critical to sustained vulnerability-reducing activities. Involvement of key stakeholders means helping science serve local vulnerability-reduction priorities.

#### Empowerment

Strengthen the ability of people to help themselves – increase sustainability by giving the people affected the tools they need to help themselves, and shape their own resilience-building approaches.

#### Partnerships

Create partnerships that allow stakeholders from international, national, and local levels to pool their strengths in reducing vulnerability: international (capacity, resources and vision), national (legal frameworks and resource channelling), local (understanding of complex issues and contact with stakeholders).

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### Ownership

Finally, research into, awareness of, and policies reducing social vulnerability will fail if they do not involve the people who experience social vulnerability. Individual and local trust and ownership of vulnerability-reducing efforts are the most important research and policy components. Living conditions will improve in a sustainable manner only when the most important stakeholders – the vulnerable themselves – embrace the idea of vulnerability reduction and own the tools that help to build more resilient communities.

# Networking

Heatwaves and droughts will become more severe as a result of climate change. The photograph shows women gathered at a small well at Tajae in Niger. Innovative insurance solutions can help to relieve suffering, but only if we network our knowledge about people's needs and the way they think.

Droughts, unlike earthquakes, are not something that catch us completely unawares. Nevertheless, because they last for such a long time, they are among the most destructive natural catastrophes, laying waste to entire regions. Year after year, millions are affected by droughts, a scourge which destroys the will to live even when it does not destroy lives.

The African continent is particularly prone to droughts. In Ethiopia alone, they caused some 600,000 deaths in the 1970s and 1980s, with seven million people being subjected to extensive periods of drought. Sudan, Malawi, Chad and Mozambique also struggle with extremely arid conditions. Currently, countries in the Horn of Africa are worst affected by water shortages, and the irony of it is that Ethiopia and Eritrea also have to face widespread floods. The paradox of having either too much or too little water is found elsewhere in Africa as well. United Nations scientists believe that climate change will further aggravate such extremes and that the number of people affected on the world's poorest continent alone could soon exceed the 200 million mark.

The UN has launched the ClimDev Africa project as a response to the problem of drought over the long term. Initially, the objective of the project is to collate and process data on weather and climate. Funds pledged by the United Kingdom will be used to improve risk management in a total of eight countries. The programme will be later extended to cover approximately one half of the African continent.

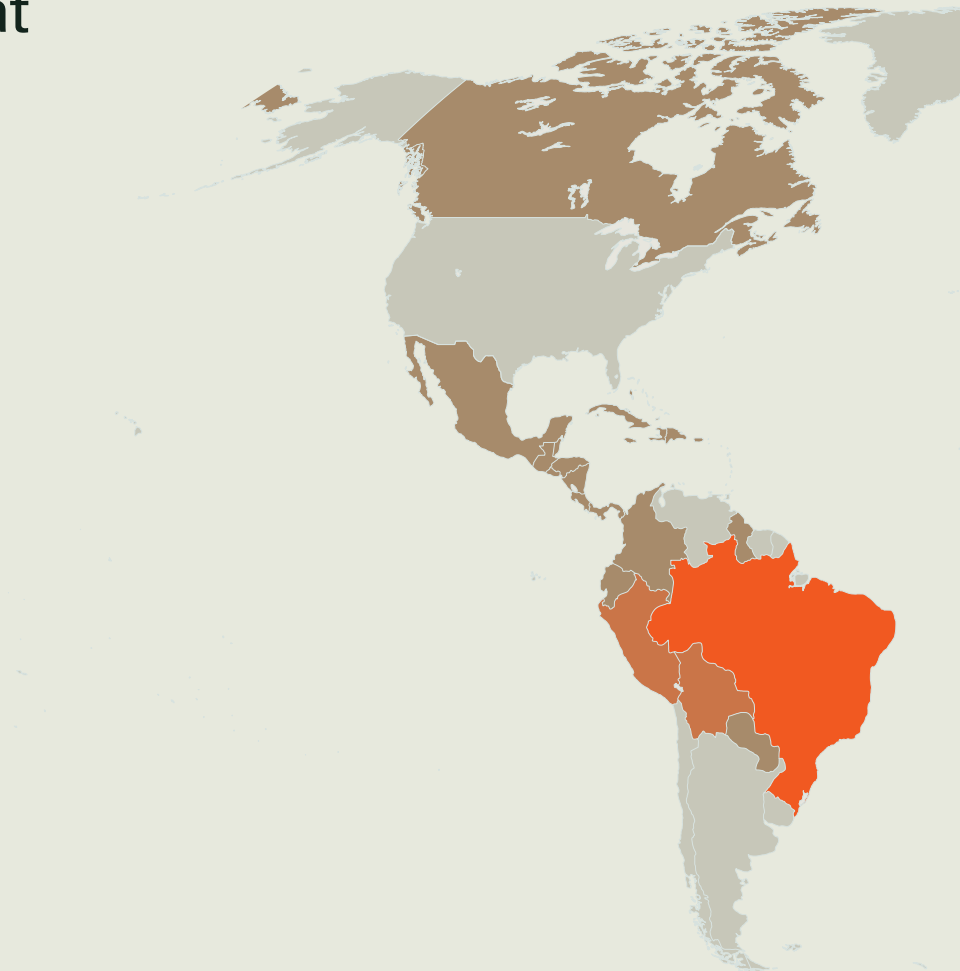
#### Drought and the poverty trap

Until the ClimDev Africa project takes effect, the UN and donor nations will be further called upon to provide famine relief in drought-stricken regions. The FAO (Food and Agriculture Organization) and WFP (World Food Programme) have had a regional presence for several decades, supplying food to some 90 million people each year. The WFP supports around 80 of the poorest countries. But for many, help comes too late. If crops are damaged, people are often forced to sell everything they have in order to survive until financial help arrives. They are caught in a poverty trap from which they can no longer escape by their own efforts.

For precisely this reason, it would be of benefit to develop and implement practicable insurance solutions for dealing with crop losses. In some industrialised countries, it has long been customary to insure against exceptional or extreme weather conditions. This enables US power suppliers, for instance, to make good any losses incurred if the winter is unseasonably mild. Similarly, ice manufacturers can take out insurance to cover any falls in revenue they may sustain in a cool summer.

## Thomas Loster

### Together we can beat the drought trap







**Thomas Loster**

For the past 20 years, the Chairman of the Munich Re Foundation has been involved in the field of climate change impacts. The foundation is able to draw on this experience in its endeavours to find solutions to help drought-stricken countries.

Weather derivatives or index products would also be suitable for the developing countries in the drought corridors, and this would open up a large market to the insurance industry, offering huge potential. The mechanics are as follows: compensation is paid if there is insufficient rainfall in crucial growth periods. This allows people to purchase food ahead of a failed harvest, a major step in overcoming poverty. If this then leads to the establishment of a viable insurance market, the result will be a system which is more reliable and cheaper to administer than cumbersome international aid programmes.

#### **Obstacle to development**

In many countries in South America, Asia and Africa, index and derivative products of this kind fail for want of suitable or reliable data. Moreover, reactions tend to be negative. It is particularly difficult to win trust and understanding for insurance schemes in developing countries as, by and large, they have not previously had access to financial services. And it is very hard to explain that premium payments are not savings.

#### **The world's first humanitarian insurance**

Thankfully, there are now plans to remove these obstacles. The proposals range from individual microinsurance schemes to meso-scale coverages designed to improve living conditions for several million people over a sizeable area. (See diagram, page 15.)

The first concrete moves in this direction were made in Ethiopia in 2005 when the WFP and other donors issued a policy to insure people against extreme droughts. In essence, if 26 weather stations record insufficient rainfall during the period March to October, 17 million farmers receive compensation.

Even where multi-year covers are involved, the success of innovative schemes of this kind still hangs by a thread where Africa is concerned. If rainfall is below the trigger threshold for a period of several years, it is difficult for the insurer to recover loss payments via the premiums. If, on the other hand, conditions are clearly arid but rainfall does not fall below the trigger threshold, no compensation will be paid – perhaps even for several years. In that case, people will not understand why they have to pay premiums when they receive nothing in return.

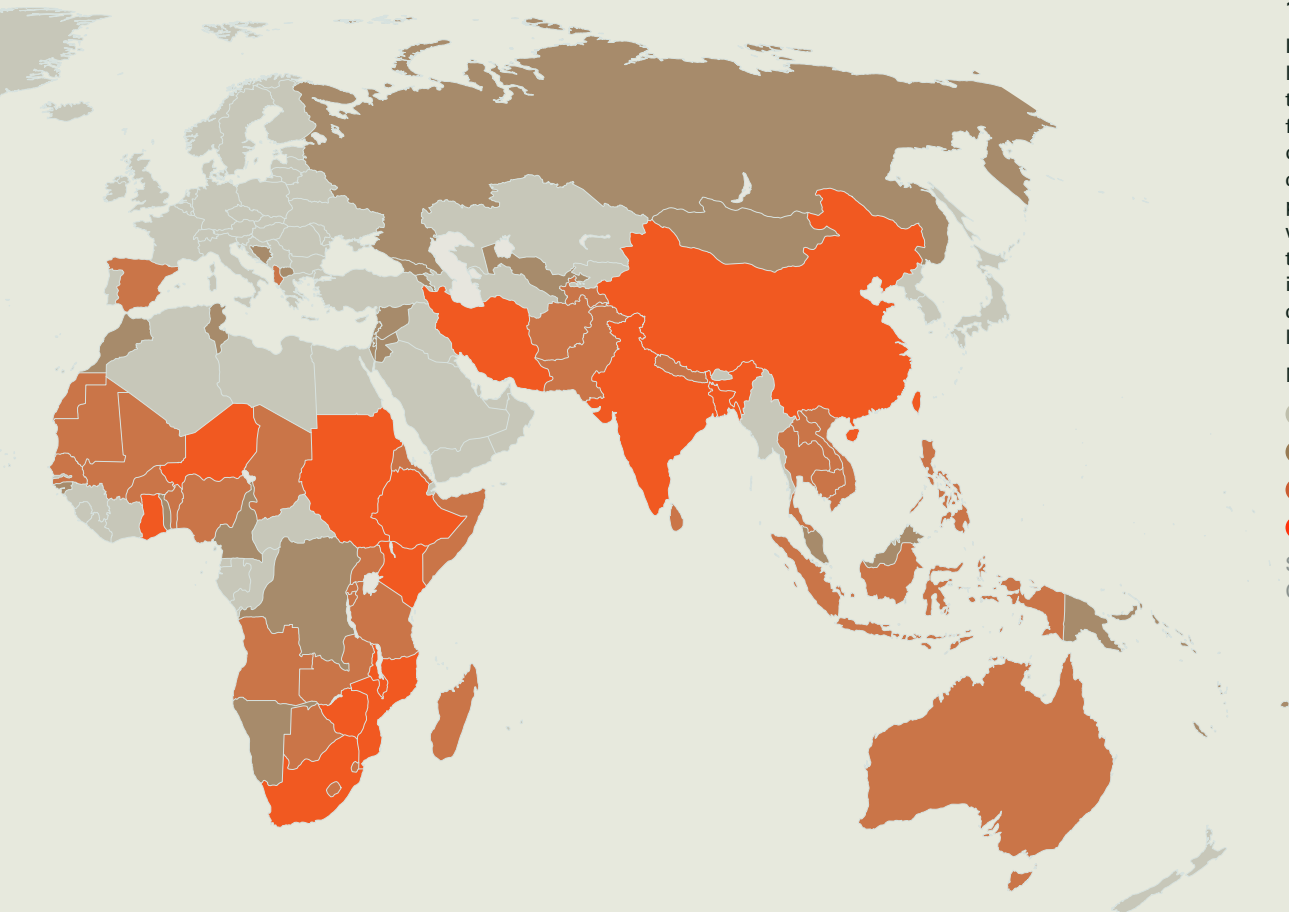
#### **Number of people affected by drought worldwide in the period 1970–2006**

Industrialised countries like Spain, Belgium and the USA also suffer from frequent droughts. They do not necessarily have to cause famine disasters in poorer countries. The worst of these occurred in the mid-70s and mid-80s in the Sahel zone. Each claimed several thousand lives.

Number of people

- 0
- 1–1,000,000
- 1,000,001–10,000,000
- > 10,000,000

Source  
CRED, Brussels, 2006



This example holds the key to an acceptable solution. It takes a relationship built up over many years and a sufficiently broad geographical distribution to achieve a spatial or temporal risk equilibrium. Success basically depends on the product design and on the establishment of long-term, continuous partnerships.

### What makes a successful product?

#### Simple forms of cover

The ancient Egyptians had an agricultural tax which was linked to the depth of the River Nile at Elephantine Island. The deeper the water, the better the harvest and the higher the tax imposed. Although such a simple solution is not appropriate for drought insurance, complex formulae with triggers that only experts can understand tend to be counter-productive, especially when disputes arise. If the situation is not clear-cut the insured tends to suspect foul play.

#### Allowing for losses

The insured think that they are being exploited if the meteorological trigger is set so high that seemingly no claims are paid. Arid years, when there have clearly been crop losses, are a particularly thorny issue. The structure should make some provision for payments in less critical situations. Although this increases the premiums, it is essential in order to persuade people to accept the scheme.

#### Multi-year terms

Risk partnerships developed over a period of years and based on trust are fundamental to risk-sharing, whereas insurance that relies only on short-term gains does not work. A stable partnership is far better than constant wrangling over premiums.

#### Geographical distribution

The wider the geographical distribution of an insurance product, the easier it is to bear the load. Insurance is a system based on solidarity and works best with a broad geographical spread.

### Risk partnership as a success factor

#### Dialogue and understanding

As a rule, the different players – politicians, scientists, economists, the people concerned – do not “speak the same language”. To minimise the risk of misunderstandings, there has to be a clear consensus about the objectives and time-frame, together with free-flowing dialogue. It is not essential to agree on every single point, and an element of dissent may even be beneficial provided all sights are firmly fixed on the common goal. The parties involved will not give their full support unless they can see the benefits of cooperation. The importance of ensuring continuity of personnel is often underestimated in this respect.

#### Specific agreements

The partners have to agree on coherent strategies, forge realistic plans, consistently measure the results and involve as many of the decision-makers as possible from the outset. Moreover, the higher the entry barriers and objectives, the longer it takes for projects to get under way and the more crucial the roles of motivation and mutual encouragement. Consequently, small projects often have a better chance of getting off the ground. Prospective partners should not overstretch their resources by embarking on major projects from the start.

#### External communication

Finally, it is important to share success stories and make no secret of obstacles encountered and lessons learnt. Failure to learn from our mistakes means continuously reinventing the wheel. Projects involving market leaders tend to have a multiplier effect.

At a time when climate change requires many different kinds of adaptation, more thought has to be given to underwriting tools. By a judicious integration of preventive measures, they provide more than just financial equilibrium. In addition, risk transfer can be a way to ease the suffering and improve the lot of millions of drought victims.

The foundation will continue to encourage networking among experts at all levels in the future. The way to escape the drought trap is for all those involved to seek sustainable solutions.

**Insured**  
Individual  
**Geography**  
Home  
**Sum insured**  
US\$ 50–5,000

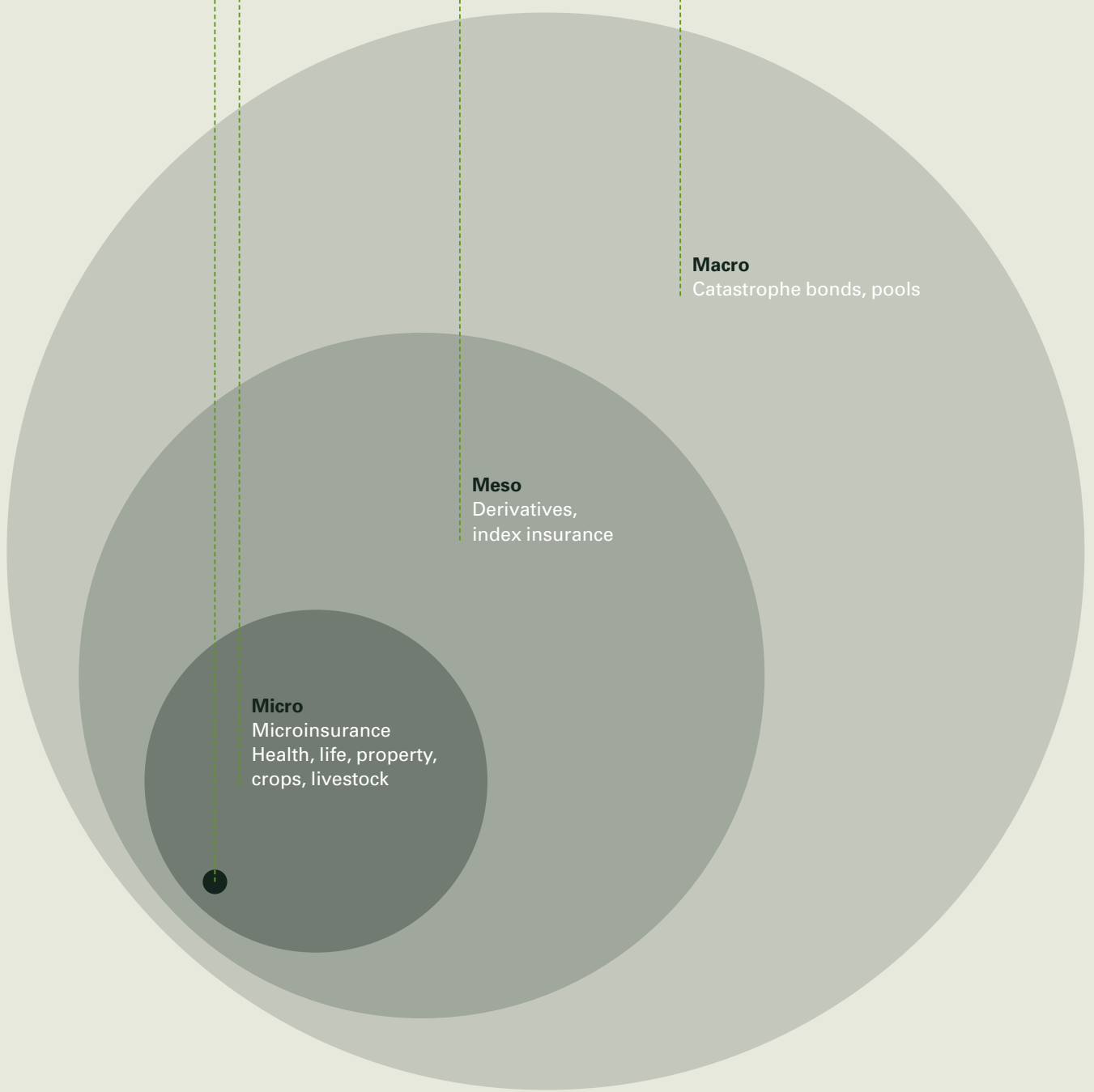
**Insured**  
Group  
Up to several hundred  
**Geography**  
Town, local community  
**Sum insured**  
US\$ 50–5,000

**Insured**  
Larger community  
Thousands to millions  
**Geography**  
Region  
**Sum insured**  
US\$ 200,000 to several million

**Insured**  
Nation/Government  
Hundreds of thousands to several million  
**Geography**  
Country  
**Sum insured**  
US\$ 100m to several billion

**Insurance products for people in developing countries**  
Scale, products, beneficiaries  
Innovative insurance solutions can be tailored to individuals or large groups. The products and mechanics vary widely. If developed, they have the potential to help many millions of people.

Munich Re Foundation, 2006



## Creative solutions to fight poverty

### Second International Microinsurance Conference

Microinsurance is playing an increasingly important role in the international fight against poverty. The second Microinsurance Conference, held in Cape Town from 21–23 November 2006, considered how people with low incomes could gain access to insurance, particularly in Africa.

The number of microinsurance schemes and insureds doubled every year throughout the past decade according to a report issued by the International Labour Organization. However, in the world's 100 poorest countries, only 80 million people, 3% of the poor, have access to insurance.

150 experts from 30 countries, including representatives of 80 international governmental and non-governmental organisations, aid agencies and the insurance industry, met for intensive discussions under the motto "Making insurance work for Africa". The annual conference was organised by the Munich Re Foundation and the Consultative Group to Assist the Poor (CGAP) Working Group on Microinsurance in collaboration with the FinMark Trust, a South African-based independent organisation committed to creating viable financial markets in developing countries. Half of the participants represented insurance and reinsurance companies, including Old Mutual, Santam, Hollard, AIG, Munich Re and Zurich Financial Services – a sign of the growing interest taken by established market players in under-provided regions. The conference was attended by some 150 delegates in all, considerably more than at the inaugural

Microinsurance Conference in 2005. The conferences are coming to be recognised as an international platform for sharing opinions.

Dirk Reinhard, Vice-Chairman of the Munich Re Foundation and organiser of the event, stressed how important innovative financial concepts were to developing countries. "The awarding of the Nobel Prize to Muhammad Yunus and his Grameen Bank has helped to raise global awareness of the importance of the microfinance sector." Insurance was a vital complement to loans, savings accounts and other financial services, mitigating risks and crises in low-income households. "It all began with small loans granted to women to enable them to expand their businesses. We now realise that financial services have a protective as well as a productive function. Specially designed insurance products are vitally important to many low earners," Mr. Reinhard stated.

This is backed by the figures. According to the ILO, only 20% of the world's population has access to adequate social insurance provision such as healthcare and pensions. Over half have no cover whatsoever. The African continent comes off very badly in global terms, fewer than 7% of the population having any insurance cover at all according to a survey by FinMark's FinScope Institute. Insurers have to find creative solutions that cater for demand from the non-traditional markets.

Craig Churchill, an ILO microinsurance expert and Chairman of the CGAP Working Group on Microinsurance, argued that the supply gap could be bridged by microinsurance. "As these countries have limited resources, we need an additional approach that uses government incentives to encourage greater private sector involvement in the interests of the community."

[www.microinsuranceconference2006.org](http://www.microinsuranceconference2006.org)

#### Top

Dirk Reinhard, Vice-Chairman of the Munich Re Foundation and organiser of the event, welcomed more than 150 experts from 30 countries to the conference.



#### Bottom

Delegates from 80 international organisations met in the plenary sessions and numerous workshops. Topics ranged from extending the scope of health insurance in Africa to the role of the insurance industry and the necessary legal framework.



17 Although there is no shortage of demand from low-income groups, a fully-functioning insurance market needs the right products and efficient distribution channels. The scale of the potential involved is illustrated by South Africa, where some 100,000 communal burial societies collect around US\$ 1bn in premiums. These enable low earners to meet the often substantial costs of family funerals. Given the number of people obliged to provide for unexpected expense in this way, it would seem that the established insurance market fails to meet demand.

Innovative schemes such as Uganda's Microcare health insurance and West Africa's communally organised Mutuelles Santé cooperatives show that the problems of the microinsurance market can be solved. Major obstacles include high distribution costs and a lack of understanding about the way insurance works.

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**Microinsurance is a vital complement to loans, savings accounts and other financial services, mitigating risks and crises in low-income households.**

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Again, South Africa sets an example. Microinsurance is at the heart of the burial societies in all but name. In South Africa, unlike India, traditional insurance companies are the main driving force, rather than microfinance organisations. They have joined forces with the country's major retailers, such as Shoprite, Edcon, PEP Stores and Ellerines, to provide microinsurance policies.

In conclusion, Dirk Reinhard told the conference, "We are experiencing new growth with enormous opportunities. Far from being small and insignificant, microinsurance is the key to social provision and the fight against poverty." The conference participants were particularly interested in regulation issues, the legal framework being a major factor in the acceptability of microinsurance schemes. This issue will accordingly be on the agenda of the next conference, which will be held in Mumbai in November 2007.

## Banker to the poor Nobel Peace Prize 2006

Economist Muhammad Yunus masterminded a breakthrough for the microcredit concept, and was awarded the Nobel Peace Prize 2006 in recognition of his achievements.

No money, no security and not even a bank account. Muhammad Yunus is there to help when conventional banks say "no". He grants start-up microloans in developing countries. These are designed to help poor people to place their lives on a more secure footing. Yunus and his creation, the Grameen Bank, were awarded the Nobel Peace Prize 2006 in recognition of their services to the poorest of the poor.

The concept behind microinsurance is very similar to that of microcredits. However, whilst microcredits cater primarily for start-ups, microinsurance provides cover for risks such as illness-related crises, safeguarding existing financial situations in the long term.

Yunus was able to dispel initial doubts and is now highly successful. Grameen Bank has some 6.8 million borrowers, 97% of whom are women. It offers its services at more than 73,000 locations, and covers virtually 90% of the villages in Bangladesh. The loans are granted for productive purposes such as keeping a chicken farm or opening a tea stand.

Yunus does not require security and accepts that the loans are too small to be processed by conventional banks. He does not have a cumbersome administrative system. Instead, he relies on a small army of employees, sending them out to the villages to collect the capital and interest repayments from borrowers. This minimises the default rate.

The economics professor believes that we all possess something of the entrepreneurial spirit and that people should not be denied the opportunity to provide for their families by setting up a small business. The poor are in general neither too passive nor too ignorant to earn money. It is the constant struggle to survive that stops people saving up the capital they need to start a business. Yunus' idea shows that a little help can go a long way – a motto that is equally true of microinsurance.

## First microinsurance compendium

### 25 case studies from four continents

“Protecting the poor – A microinsurance compendium”, jointly published by the Munich Re Foundation and the International Labour Organization (ILO), was the first comprehensive compendium on microinsurance. As an indispensable reference work based on practical experience, it summarises the current state of knowledge, explains the problems, and offers new solutions.

Microinsurance is still in its infancy. A 2006 survey of the world’s 100 poorest countries by US-based MicroInsurance Centre revealed, as mentioned above, that fewer than 80 million people (3% of the most economically deprived) had access to insurance. To enable the idea to gain ground, it is important that we analyse the existing systems, the problem areas and the potential schemes. The compendium “Protecting the poor”, published in November 2006 by the International Labour Organization and the Munich Re Foundation, takes a comprehensive look at microinsurance with this in mind.

The compendium was compiled by Craig Churchill of the ILO. He is the Chairman of the Consultative Group to Assist the Poor (CGAP) Working Group on Microinsurance, a consortium of international aid agencies specialising in microfinance. The first comprehensive reference work on the subject in English was published under CGAP auspices. It presents a summary of the latest research by leading scientists, actuaries, insurance and development experts working in the microinsurance field. Numbering 650 pages in all, it takes a detailed look at all aspects of microinsurance including product design, distribution, premium collection and governance.

Craig Churchill commented: “The relationship with the Munich Re Foundation has been mutually beneficial.” Perhaps more valuable than the foundation’s financial contribution is the indirect access to the knowledge of one of the world’s best know reinsurance companies. Mr. Churchill also noted: “Having the Munich Re Foundation associated with microinsurance adds instant credibility to our efforts to popularise and improve microinsurance to protect the poor, and attracts more experts from the mainstream insurance industry.”

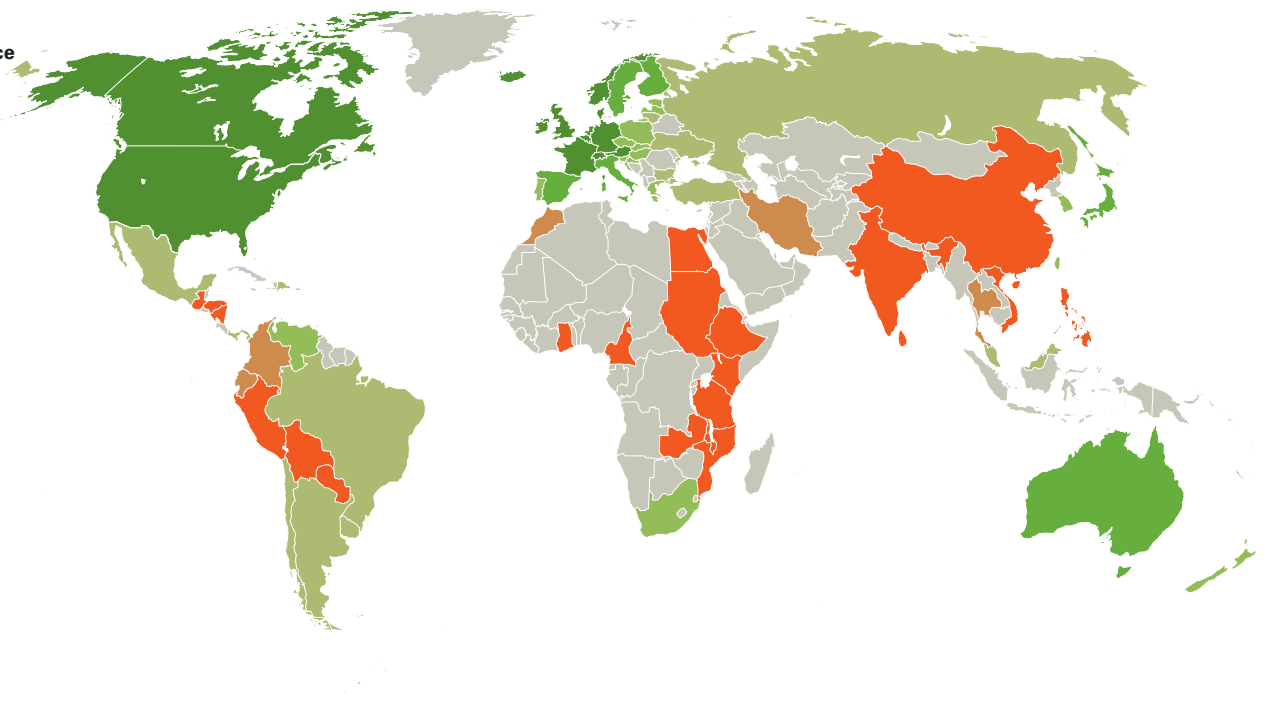
The Microinsurance Compendium is the essence of a four-year research project in which the CGAP Working Group examined two dozen case studies based on 40 microinsurance schemes in different parts of the world, citing examples – both good and bad. The study concentrated on organisations with a minimum

#### Worldwide per capita distribution of insurance premiums

The world is made up of the insured and the uninsured. There is a thriving market for microcredits and microinsurance in the developing world.

Property insurance premiums (non-life including health) per person and per year

- Uninsured
- US\$ 1–25
- Basically insured
- US\$ 26–50
- Well insured
- US\$ 51–100
- US\$ 101–500
- US\$ 501–1,000
- > US\$ 1,000
- No data



19 of three years' experience in the field of microinsurance and at least 3,000 insureds. It focused on Africa, Asia and Latin America, the microinsurers examined representing as many different business models as possible.

**Microinsurance fulfils an important function and can even be profitable, provided the circumstances are right and the many obstacles overcome.**

The 38 authors, who came from a wide range of backgrounds – most being members of the CGAP Working Group – summarised the findings they had reached in the course of the research project. In all, nearly 100 people were involved in the case studies and book. Although the authors represented a variety of different opinions, the book gave a clear picture of the current situation, and in particular the challenges faced by low-income groups and potential solutions. The compendium shows that microinsurance fulfils an important function and can even be profitable, provided the circumstances are right and the many obstacles overcome.



**Top**  
Craig Churchill of the ILO thanks the authors – over 30 in all – who contributed articles to the book.

**Bottom**  
Written in English, the 650-page work on microinsurance deals with a variety of products, services, and institutional issues and draws on practical experience.



## Protecting the poor – A microinsurance compendium

“Protecting the poor” is an indispensable reference work for insurance professionals, practitioners, politicians and anyone concerned that low-income groups should have access to insurance, particularly in the developing world. It aims to help millions to overcome poverty by their own efforts.

The first section, “Principles and practices”, defines microinsurance, describes the risks to which low-income households are exposed, and explains the social protection role of microinsurance.

The second section, “Microinsurance products and services”, summarises experiences with a number of products and investigates the extent to which the product has to be tailored to the specific needs of women and children.

The third section describes the different “microinsurance operations” in detail, and features product design, distribution, premium payments and risk management. The section concludes with a chapter on microinsurance performance indicators and benchmarking.

The fourth section, “Institutional options”, deals with the institutional aspects and highlights the advantages and disadvantages of the various models.

“The role of other stakeholders”, the fifth section, looks at the part played by the main stakeholders, such as donors, supervisory authorities, governments, insurers and reinsurers.

“Conclusions”, the sixth and final section, summarises the strategies needed to achieve a balance between the cover, the costs, and the premium. Finally, the book considers what lies ahead for microinsurance.

In addition to its commitment to the compendium, the foundation continues its support of the annual International Microinsurance Conferences. These conferences are recognised as an important platform for sharing experiences.

Individual chapters of the microinsurance compendium can be accessed free of charge on the following website:

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

# Sensitisation



The effects of climate change are not always as immediately apparent as in Europe's snow-starved winter of 2006/7. If we want to contain the effects of anthropogenic climate change, the message has to be brought home to young people.

“Natural catastrophes are cultural catastrophes.” This well-known, apparently paradoxical, assertion by Kiel sociologist Lars Clausen illustrates on the one hand the effects of extreme natural hazards, which end in catastrophe only if people, buildings or other value creations are unprepared when disaster strikes. Catastrophes do not happen in the desert or in polar regions.

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**We have reached a critical point in terms of the long-term repercussions for developing countries and future generations.**

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On the other hand, Clausen is saying that mankind and its culture are based on an increasing exploitation of resources. Mankind is exerting a growing, more lasting influence on natural living conditions and effectively sawing off the branch on which it sits. After all, to put it in human terms, nature does exact a tribute. It reacts to interference with its natural, generally dynamic, equilibrium in accordance with its own laws, which it – unlike humans – can be counted on to apply.

#### **New dimensions in climate change**

The pace of global warming is already greater than at any time in the last million years and is expected to gain still more momentum. This is a prime example of man’s intervention in nature and of the resulting risks. It is a consequence of the intensive exploitation of fossil energy sources and of large-scale deforestation, which have already drastically increased the concentration of greenhouse gases in the atmosphere and are expected to do so still further in the foreseeable future. Although the effects of other man-made environmental changes – such as decreasing biodiversity, over-fishing of the oceans, over-exploitation of water resources and the spoliation of land – are more immediately apparent and of far more dramatic regional impact, global climate change adds a completely new dimension, threatening each and every one of us. What makes it so disturbing is that the earth has gradually been getting warmer since the start of industrialisation some 200 years ago, but until recently this had gone virtually unnoticed. Even using long-term data, it is difficult to distinguish global warming from natural climatic variability.

## **Prof. Gerhard Berz** **Avoiding** **the uncontrollable –** **Controlling** **the unavoidable**



**Prof. Gerhard Berz**

Prof. Berz, a meteorologist and geophysicist, was head of Munich Re's Geo Risks Research from 1974 to 2004, establishing its reputation as a leading institution within and outside the insurance industry. Prof. Berz is involved in a number of national and international associations.

Fortunately, one or two key witnesses make it increasingly difficult for even the most hardened sceptics to deny the existence of the link between industrialisation and climate change. For example, the glaciers are gradually melting in all but a few regions such as the inner Antarctic, where temperatures are too low for the ice to melt and instead there is more snow. There are also visible signs of the effects of changing climate conditions on flora and fauna. Habitats are being displaced, and there are changes in migratory behaviour patterns and plant development.

More frequent and more intensive weather catastrophes, directly related by nature to extreme atmospheric events, have always been among the most telling indications of global change. Once again, nature obeys its own – and statistical – laws, responding with extremes when, for example, there are shifts in average temperature and precipitation. In the last third of the current century, we can expect summers like that of 2003, a once-in-400-year phenomenon according to previous climate data, to occur on average every other year. In other words, they will virtually become the norm in Europe. At the same time, we will experience occasional summers that are hotter than any before.

#### **Insurance as an early-warning system**

Like the hot summer of Central Europe in 2003, the hurricanes that lashed the Caribbean and the USA in 2004 and 2005 may also be the shape of things to come. Clearly, the higher the sea temperatures, the longer the hurricane season, which gives rise to more cyclones, greater peak intensities, and changes in the patterns of hurricane tracks, not only in the Atlantic but also in the other tropical and subtropical oceans.

Insurers, and in particular international reinsurers, must by nature keep a "weather eye" on any changes in their risk environment to avoid being caught unawares, and even to survive. They have therefore become a kind of early-warning system for the effects of global climate change. Frequently accused of being alarmist and of professional pessimism, the insurance industry was the first economic sector to draw attention to the disconcerting rise in natural catastrophe losses. The industry has also shown that the cause was not only higher value concentrations and the increasing vulnerability of modern industrial societies. The rise was also due to a large extent to global climate change.

Economic and political cost-benefit considerations in matters of climate change are even now based on the insurance industry's loss statistics. At the same time, insurance companies and banks have realised that the public respects their commitment and that they are doing themselves a good service. Not without good reason has the former head of the United Nations Environment Programme, Klaus Töpfer, referred to the financial sector as being his main ally.

#### **Raising awareness**

Clearly, it is not enough just for politicians and economists to take climate change seriously. Indeed, the problem cannot be tackled unless everyone is aware of the changes and potential remedies. We must educate and motivate as early and on as broad a scale as possible. Kindergartens and schools have their part to play – not easy at a time when lessons compete with computer games, television shows and other forms of entertainment, although these can also be used as learning aids.

Whilst the consequences of natural catastrophes are often tragic, they can provide an opportunity to reconsider causes and revise preventive measures. Recent examples seem to indicate that we are likely to make progress only if we follow this painful course. There is no time to be lost. There are growing indications that the pace of climate change is accelerating, with dire consequences. We have now reached a crucial point in terms of the long-term repercussions for developing countries and future generations. This is aptly described by Hans-Joachim Schellnhuber, Director of the Potsdam Institute for Climate Impact Research: "It is now a matter of avoiding the uncontrollable and controlling the unavoidable." If we do not succeed, that really will be a catastrophe for human culture.

## Climate protection fever Schools competition

“Young people with boundless energy – Protect the climate!” was the theme of a nationwide campaign aimed at young people in 26,000 schools. The Munich Re Foundation sponsored a special prize.

The project, designed to boost awareness of climate change in schools, was the brain-child of the German Federal Environment Ministry (BMU). Pupils were given worksheets and handouts on renewable energies, energy efficiency, the environment, mobility and climate protection together with an energy quiz to use as support material for the lessons. They also had the option of seeking advice or financial help from project partners such as regional associations, firms and initiative groups. Some 7,000 pupils submitted proposals.

The Berlin Zeitbild Verlag publishing house, which has extensive experience in the education field, organised the competition, partnered by the Munich Re Foundation whose mission, like that of the competition itself, is to devise solutions, put knowledge into practice and take corresponding action.

Enthusiasm and imagination were the order of the day. The pupils had 12 months to explore the issue of renewable energies and to come up with ideas for conserving fossil fuels. The results were convincing:

The award ceremony was held on 26 April 2006. It was attended by 150 pupils and teachers from all over Germany. The top twelve teams, representing eight federal states, presented their climate protection projects. State Secretary for the Environment, Matthias Machnig, presented cash prizes totalling €15,000.

First prize went to the pupils of Hermann Tast School in Husum in recognition of their commendable efforts and original ideas. They constructed Germany's first-ever (scaled-down) offshore wind farm on mudflats. The young climate change activists were selected by the jury on account of their ingenious idea for using miniature wind turbines to generate hydrogen. Prizes also went to a group from Berger Feld Comprehensive School in Gelsenkirchen for their excellent scheme designed to teach fellow pupils about climate protection, as well as to the Ferdinandshof School in Mecklenburg-West Pomerania. Pupils of this school for children with learning disabilities turned the spotlight on the value of nature and nature protection in a short musical production called “The Generation Tree”.

The Munich Re Foundation presented a special prize for the best individual effort: a solar-charged iPod. The winner, 16-year-old Sören Klabunde of Sollstedt Secondary School, produced a mirror distillation device for purifying drinking water. The self-powered condensation device can be used to supply clean drinking water in regions with abundant sunshine. It has the potential to improve living conditions for people in much of the developing world.

The Munich Re Foundation will also be involved in the 2007 nationwide schools competition in recognition of the vital need to inform young people about the consequences of climate change and get them to consider what can be done about it.

[www.unendliche-energie.de](http://www.unendliche-energie.de).



The proud winners from Berger Feld Comprehensive School in Gelsenkirchen. They won the jury's vote for their entry “A lesson in climate protection”.

## Lessons from space

### Climate expedition project

“Climate expedition”, a project conceived by German environmental and development organisation Germanwatch, brings daily updated satellite views of earth to the classroom. The Munich Re Foundation supports this education project, which is designed to increase young people’s awareness of climate change.

Germanwatch embarked on its climate expedition in August 2004. Using modern technology and satellite imagery, environmental educationalists explain how climate works, the changes it has undergone in recent decades and the impact of climate change, particularly in developing countries. The project is an ideal way of highlighting key aspects of sustainable development.

Holger Voigt, one of the environmental educationalists responsible for the project, explained: “We want to encourage pupils to think about the environment and to actually do something. Instead of standing at the front and lecturing, the idea is to use satellite images and technology to stimulate their interest”. Mr. Voigt, a biologist, knows from experience that the cutting-edge appeal of live images makes them very popular with pupils and teachers.

A project day normally comprises three double teaching periods, during which pupils can look down on the eye of a hurricane from 36,000 km above the earth, see the effects of floods in Ethiopia or take a look at the gradually receding Lake Chad.

They also find out about the Kyoto Protocol’s climate policy proposals and what they themselves can do to protect the climate, for instance by consuming less energy. Germanwatch also provides materials which teachers can use for an in-depth exploration of the issues covered by the project.

The teaching module was originally introduced in North Rhine-Westphalia but increasingly schools in other German states have asked to be included. The Munich Re Foundation is supporting the project to help Germanwatch meet this growing demand. Climate change tends to unleash forces of nature such as hurricanes, droughts and floods, which increase sea levels and threaten countless lives. By raising people’s awareness of the risks, the climate expedition concept is in line with our motto “From Knowledge to Action”. The foundation’s principle target group for the project is young people. A wealth of information has been published on the subject of climate change but it is felt that the virtually real-time images from space will have particular appeal for the young.

The United Nations has acknowledged the project’s importance by granting it official status under its World Decade of Education for Sustainable Development. Spanning the years 2005–2014, the World Decade was launched to promote social, economically viable and ecologically sustainable development.



Environment educationist Holger Voigt uses satellite pictures taken from 36,000 km above the earth to show pupils the consequences of the rise in sea levels.

Munich's children threatened  
by smoking and accidents

Munich:  
Dangerous terrain?

Encouraged by the success of the inaugural year dialogue forums, the Munich Re Foundation, supported this time by the GSF – National Research Center for Environment and Health, organised a further series in autumn 2006. The five evening forums gave Munich residents an opportunity to voice their concerns before a panel of experts. What risks are our children really exposed to? Is fine dust making us ill? Are we prepared for a pandemic? How do the media influence our perception of risks?

The series was attended by people who live in and around Munich, together with representatives of the environmental and health authorities, political and business life. It was organised by the Munich Re Foundation as part of its endeavour to identify, classify and prevent risks and to propose remedial action. We also see the dialogue forums as a way to promote awareness of risks close to home and show that, as a Munich-based foundation, we have the city's interests very much at heart. The importance of this concern became more evident with each dialogue forum, as there is often a substantial gap between people's personal perception of danger and actual risk potential.

### Children in Munich – What risks are they really exposed to?

21 September 2006

Children are not small adults. For that reason, it is all the more important to investigate the specific risks to which they are exposed. We are hampered in this because media reporting of environmental risks and our subjective perception of them do not always reflect the real dangers.

#### What are the main perils?

The experts agreed that passive smoking in the home and accidents were the two main risk factors. Dr. Hermann Fromme of the Bavarian Health and Food Safety Authority stated that two-thirds of 6 to 13-year-olds were regularly exposed to cigarette smoke and that one in five pregnant women smoked. The consequences ranged from middle-ear infections and asthma to cancer. "It is high time Germany did something," he urged.

Dr. Stephan Böse-O'Reilly, a paediatrician at the German Network on Children's Health and Environment, identified traffic accidents, which involved significant costs, as one of the main risks, in addition to passive smoking. In all, €300–600m could be saved annually through the prevention of traffic accidents and €250m by action against passive smoking.

Prof. Peter Höppe, Head of Munich Re's Geo Risks Research unit, explained that people tended to overestimate risks over which the individual had little control. For example, parents were unduly worried about the threat posed by nuclear radiation and mobile phone masts but paid too little attention to the dangers of lack of exercise and domestic accidents.

Parents have the wrong

## 27 Which children are particularly exposed?

In the case of passive smoking, it has been proven that children from socially deprived backgrounds are more at risk. Prof. Monika Jungbauer-Gans of the Institute of Social Sciences at the University of Kiel also established from the results of school-entry medical examinations in Munich that children from low-income households were more inclined to be overweight and suffer from lack of exercise. The position was reversed in the case of vaccinations. "In Munich, the more educated the parents, the less likely they are to have their children vaccinated and the more likely to turn from orthodox to alternative forms of medicine."

## How dangerous are vaccinations?

Opinions about the pros and cons of vaccinations were very much divided both in the audience and among the experts, showing that the issue of children and the risks they face should not be dropped from the sociopolitical agenda. Thomas Loster, Chairman of the Munich Re Foundation, concluded: "Unfortunately, people still fail to appreciate many of the risks faced by children. But we can only take appropriate action if we are aware of the real risks."

## Is fine dust making us ill?

## Fine dust in Munich – Is it making us ill?

5 October 2006

Munich has one of the highest traffic volumes of any German city, and EU limits on fine dust particles are often exceeded in just the first few months of the year. The issue provokes debate – and not just between the environmentalists and the authorities. The second dialogue forum proved particularly topical in the light of an announcement by the World Health Organization (WHO). Within hours of a WHO press release on new guidelines for air pollutants such as fine dust particles, ozone and sulphur dioxide, some 80 people had gathered to hear scientists, politicians and environmentalists discuss the issue of fine dust in Munich.

## Which particles constitute the main health risk?

Of particulate matter with a diameter of less than 10 micrometres (PM10), particles which have a diameter of less than 2.5 micrometres (PM2.5) are considered especially harmful. Current levels of PM2.5 are estimated to reduce statistical life expectancy in Europe by approximately nine months.

## How strict are EU regulations compared with other international standards?

Air quality standards proposed by the EU Parliament in September 2006 now have to be seen in the context of new WHO guidelines – the first to apply worldwide. Not only do they fall a long way short of WHO standards but in addition the EU proposes that cities be allowed to exceed the limit on a maximum of 55 days as opposed to the 35 imposed by the WHO.

Prof. H.-Erich Wichmann, Director of the GSF's Institute of Epidemiology, stressed that "fine dust is so hazardous that every reduction counts!" He therefore called for strict PM2.5 thresholds together with short-term and long-term PM10 exposure limits. Professor Wichmann rejected the more lenient line on short-term limits advocated by the EU Parliament. He argued that we should reduce emissions by fitting diesel particle filters to cars and that traffic volumes should be decreased in densely populated areas. "In Germany, fine dust causes three times more deaths than traffic accidents. We know enough to take immediate action."

Gerd Rosenkranz of the Deutsche Umwelthilfe environmental group dismissed the EU's latest proposals as not so much an attack on fine dust as an attack on threshold values. He too advocated fitting diesel particle filters to older vehicles and introducing congestion charges. "We ran a campaign to alert the car industry to the problem but their lobby is too powerful," he conceded.

Member of the European Parliament Holger Krahmer defended the EU's proposals and higher short-term values. Isolated measures had little effect. We needed to strike a social balance between the measures, and stop pitting industry against man and environment.

Joachim Lorenz, Head of Munich's Department of Health and Environment, described the EU's proposals as ill-advised. "The only way to achieve our objective is to keep up the pressure", he said, urging the introduction of PM2.5 limits in the EU. "We are aware of the problem but dealing with it is another matter." The city had to find intelligent solutions and consider all the options, such as banning heavy goods vehicles from certain areas.

## Fine dust is not just a local issue

The differences between the experts were reflected in the views of the audience. Is Munich tackling its traffic problems at the expense of surrounding areas? How much fine dust is due to ammonia produced in farming? The questions showed that the fine dust issue did not begin and end at the city boundary. The debate on air pollutants will become even more intense when sulphur dioxide limits are introduced in 2010. Those present agreed that pollution was an acute environmental problem both in Munich and beyond its boundaries.

## Allergies and respiratory diseases in town and country – On the increase

26 October 2006

The number of people who suffer from allergies in Germany is thought to number between 24 and 32 million. Some 3,000 die each year from the effects of asthma alone. The audience at the third dialogue forum included many allergy sufferers and the panel of eminent specialists faced a barrage of questions.

### What is the trend?

Allergies and asthma are on the increase according to surveys referred to by Prof. H.-Erich Wichmann of the GSF. However, the results vary considerably: "Allergies are less common in rural than in urban areas." The larger the community, the higher the frequency.

The reasons for this were not yet clear. Moreover, there had been a steady increase in the relatively low incidence of allergic diseases in the eastern federal states and the level would soon be the same as in the west.

### What about treatment methods?

"Allergic diseases are one of modern society's major health challenges," according to Prof. Johannes Ring, Director of the Clinic and Polyclinic for Dermatology and Allergy Biederstein at Munich's Technical University. Experience had shown him that "treatment should be seen in terms of a holistic allergy management concept". Patients had to be treated for the acute symptoms in the first instance but, in the long term, treatment had to provide complete relief. There were no magic pills or diets. We had to find the cure that suited the particular case.

### What are the main research areas?

All the experts expressed concern about the increase in allergic diseases in recent decades. In Professor Wichmann's words: "Scientists face the challenge of gaining a better understanding of the causes of allergic diseases by finding out why, for instance, given equal environmental conditions, some people are affected while others are not."

## What if an epidemic strikes – Is Munich prepared?

9 November 2006

The fourth dialogue forum could also have been called "Thinking the unthinkable". The experts discussed not only the implications of an epidemic but also the impact that a pandemic would have on Munich. The main concern was how to prevent a repetition of what happened in 1918 when Spanish Flu claimed millions of victims.

### How big are the risks?

Prof. Günther Kerschler, Head of the Health Department at the Bavarian State Ministry of the Environment, Public Health and Consumer Protection: "It is not a case of whether but when the next pandemic will strike. All countries should be prepared. There are international guidelines in the form of the WHO global influenza preparedness plan."

### Could bird flu trigger a pandemic?

Dr. Petra Graf of Munich's Department of Health and Environment was reassuring: "Bird flu is confined to the animal world and, given its current molecular structure, the bird flu virus (H5N1) could not trigger a pandemic." However, H5N1 was the candidate most likely to trigger a pandemic virus. If the genome mutated, it might be able to pass from one person to another. In August 2006, the State of Bavaria accordingly approved a programme comprising surveillance, vaccination and the provision of antiviral drugs. Dr. Graf told the audience: "Apart from that, each individual can help minimise the risk of infection." This involved a few simple but effective hygiene measures such as frequent hand-washing, not shaking hands with people, and staying away from crowds.

Wash your hands and stay away from crowds

Flu: Bavaria prepares for pandemic



# Distorted view of risk

Experts and parents do not  
see eye to eye

## 29 What plans are there for patient care in the event of a pandemic?

Dr. Wolfgang Guggemos (Senior Physician in the Department of Infectious Diseases and Tropical Medicine at the General Hospital Munich Schwabing) advised: "We have no patent recipes. But we are well prepared thanks to our extensive experience in the treatment of infectious diseases." Antiviral drugs would be used in the first stage of a pandemic. It would take at least three months to produce a vaccine once the virus had been identified. The second-generation vaccines currently being developed were likely to have a broader spectrum of activity.

The floor was then opened for questions. Opinions were very much divided, and the discussion occasionally became heated, showing the current fear and uncertainty about bird flu. Some of the statements made by the experts on the role of the politicians and media also caused comment, which conveniently brings us to the subject of the next dialogue forum.

## Pollutant of the month and the self-styled experts – The role of politicians and media in the risk debate.

28 November 2006

The fifth and last debate in the 2006 series of dialogue forums focused not on the risks themselves but on how we approach them. The discussion was chaired by Patrick Illinger, Science Editor of the Süddeutsche Zeitung, who commented that, since humans were not rational beings, the rationale behind that approach was not always immediately apparent. Indeed, the risks we worry about most are not necessarily the ones that pose the greatest threat.

Furthermore, experts and media are divided in their perceptions of risk and, even among experts, the discussions are marked by uncertainty and controversy, which in turn distorts the public perception of risks. The panelists cited cases where scientists had clearly failed to hit the right note so that the media had treated certain issues in a way that had not been intended. "When you read some of the headlines, you just have to shake your head," Joachim Lorenz, Head of the City of Munich's Department of Health and Environment, commented.

### Is media coverage an appropriate gauge of the real risk?

Dr. Otmar Bernhard, State Secretary in the Bavarian State Ministry of the Environment, Public Health and Consumer Protection, knows from experience that: "communication breaks down because there is a wide gap between the media reports, the way individuals assess the risks, and the scientific findings." Dr. Bernhard appealed to those involved to be as realistic and responsible as possible.

In practice, irrelevant risks are often given a higher media profile than they deserve. Prof. Hans Peter Peters of the Research Centre Jülich concluded that: "the amount of media coverage is not a true indication of risk. Feelings run especially high if children are involved." But, in general, relations between science and media tended to be problematic as there were often conflicting views. Prof. Peters appealed to science journalists to explain and question. We should see science as an investigative process. Once the public had grasped this, it would understand why experts held different opinions.

In the risk debate, we should not lose sight of the extent to which our perception of risk is influenced by the media. In the debate on fine dust in Munich, Dr. Joachim Käppner, Local Affairs Editor of the Süddeutsche Zeitung, commented that some time previously the threat to ban vintage cars had caused more furore than the health risk concerns. "In those circumstances, it is difficult to focus attention on the health risks."

### How can risk communication be improved?

As well as precise information, the media provided an arena for keeping public discussion on the right path in the risk debate. For scientists, this means communicating with the media in language they can understand. Politicians would be well advised not to use risk situations to score party political points and to assess risks responsibly. A potentially useful idea from the floor was to establish a council of scientists whose role would be to present the facts and help people to assess the risks.

At the end of the debate, Thomas Loster, Chairman of the Munich Re Foundation, thanked co-organisers, the GSF – National Research Center for Environment and Health, for their support and announced the resumption of the dialogue forums in 2007.

Action

People in Mozambique regularly fall prey to floods. In February 2007, 140,000 people had to be evacuated to safety from flooded areas in Central Mozambique.

Mozambique achieved its independence from Portugal in 1975. In the 1980s, civil war, the exodus of skilled Portuguese manpower, and droughts took their toll. Things have improved considerably since the signing of the 1992 peace settlement, not least thanks to a policy of economic liberalisation. Mozambique was one of the first countries to prepare a strategy paper on poverty alleviation and is well on the way to achieving the UN's Millennium Development Goals. However, the country suffered major setbacks when heavy floods occurred in the spring of 2000 and 2001.

Mozambique was one of the first countries to prepare a strategy paper on poverty alleviation and is well on the way to achieving the Millennium Development Goals.

I have been involved in development work in Mozambique on and off for over 14 years, and have witnessed at first hand the different phases the country has gone through – first the socialist planned economy, then the paradigm change to a new economic system, and finally the development process supported by the international donor community.

## Wolfgang Stiebens

### Mozambique – A land of many faces

#### Famine in the 1980s – Microcredits in the 1990s

My initial experiences date back to 1982, when I was sent to Mozambique by the German World Peace Service Organisation to work as a specialist in the agrohydrology section of the National Institute for Agronomic Research (INIA) in Mozambique. At the time, there was a strict planned economy with state enterprises and controlled markets. Food rationing cards were in short supply, and people in the towns would be starving by around the 20th of the month because they had none left. At the same time, South Africa was pursuing a policy of destabilisation, which culminated in the civil war and swelled the ranks of refugees within the country and beyond its borders. As at the time virtually the entire rural infrastructure had been destroyed, the population survived only with the help of international aid distributed under the World Food Programme.

After three years, the war front moved northwards and the situation deteriorated. We were unable to continue our work at the Institute and were forced to break off, leaving only with the hope that our initiatives would bear fruit. Fortunately, we were able to launch a number of interesting projects involving the use of wind power in small-scale irrigation schemes and we constructed wind pumps for a number of agricultural cooperatives supported by the World Peace Service.

I then became a project manager at GAPI, the economic development organisation founded by the German Friedrich-Ebert-Stiftung in order to set up a revolving fund for helping small businesses and artisans in conjunction with Germany's state-owned Kreditanstalt für Wiederaufbau (KfW) development bank. My appointment coincided with a particularly interesting period because the ruling FRELIMO state party performed an economic and political about-turn, which even pre-dated the era of glasnost in the Soviet Union. The government subsequently initiated an economic development programme which was supported by the World Bank.

In 1990, at the explicit wish of the Prime Minister, GAPI was granted the status of being the first private finance institution in Mozambique. Thanks to international backing, we have transformed GAPI into a development bank for small businesses. It grants loans and start-up funds – an idea popularised in Bangladesh by Muhammad Yunus, the banker and Nobel Peace Prize winner (see page 17).



### Wolfgang Stiebens

Wolfgang Stiebens has gained much valuable experience during the 24 years he has spent overseas as an adviser and project manager. He is currently working for the GTZ in Mozambique, where he is involved in rural development and disaster prevention, and is also setting up flood-warning systems with the backing of the Munich Re Foundation.

In 1993, I began work at the head office of German Technical Cooperation (GTZ) in Eschborn prior to being sent to Guatemala, where I was manager of the first disaster prevention project in Central America (FEMID) in the period 1996–2003.

### Disaster prevention policy

Equipped with this experience, I returned to Central Mozambique in the summer of 2003 to put structures in place for the local disaster prevention programme. This mission has now been successfully accomplished and Mozambique's National Disaster Prevention Institute (INGC) has begun to apply the same approach throughout the country as a whole. Further to its restructuring at the beginning of 2006, the INGC now concentrates its efforts entirely on disaster prevention. It has set itself the task of applying local protection schemes, like our River Búzi flood-warning system, to other exposed regions. Apart from our work in the local communities, we also have to bear in mind the important role of politics.

In 2005, we advised government representatives about prevention measures whose starting point is the local people. We visited parts of Mozambique and Central America prone to natural catastrophes, demonstrating solutions that are already working well there. It was quite clear that the enthusiasm the people in the risk areas themselves felt for the warning systems soon spread to the politicians. The country's policy-makers now regard the disaster prevention policy backed by the President of Mozambique as a key element in their development strategy. It has been incorporated in the Action Plan For The Reduction Of Absolute Poverty 2006–2009 (PARPA II), and the equivalent of €4.2m has been allocated to the INGC in the 2007 national budget. We will continue to give the policy-makers advice based on our approach in the future.

Rural development has now made great strides. For me, that day in 2000 in the Sus-sundenga district of the Manica Province when I saw my first ambulance since the dark days of the planned economy marked a real turning point. Nowadays, schools, medical and other social facilities are being built, and there has been a definite change for the better. Interestingly, the political and economic reform was initiated by sections of the government which had held the reins during the civil war and socialism periods. This has provided an institutional continuity not found in the Latin American context. Given the current weak and diffuse opposition, this situation is not likely to change in the immediate future.

### A land of hope

Mozambique's economic development is cause for optimism despite the country's heavy dependence on the international donor community. The economy grew by 7.5% in 2004, gaining further momentum in 2005. The final 2005 figure was expected to be close to 10%.

Despite significant progress, a number of problems remain, including the quality of the school system, lack of organisational capacity, rampant bureaucracy, and continued state influence in the economy. However, developments in the country inspire hope. Whether in the towns or in the countryside, people are welcoming and friendly and have an enquiring nature. It's great to work in Mozambique.

For me, that day in 2000 in the Manica Province when I saw my first ambulance since the dark days of the planned economy marked a real turning point.

## All systems running

### Mozambique flood-warning system

The Munich Re Foundation is supporting the installation of a flood-warning system on Mozambique's River Búzi, where floods regularly claim many hundreds of victims and rob people of their livelihoods. 2006 was a year of consolidation and final adjustments.

Some 14 gauge stations have now been set up along the river. However, additional work needs to be done on some of the gauges to ensure they are able to withstand the force of the flood waters. The final adjustments also involved comparisons of precipitation intensities and flood-water levels. With the help of an expert from Honduras, a model was devised to indicate critical flood-water levels. The flood-water estimates are coordinated by the district administration authority. Technical assistance is provided by the meteorological and hydrological service.

The project is sponsored and backed by village elders, mayors and the district president, and this has helped to make it a resounding success.

The flood-warning system can only work if it is accepted by the local people. Our project partner, German Technical Cooperation (GTZ), accordingly made use of the May–October dry season to train additional volunteers to read the instruments and forward the data. A special radio frequency used for transmitting the information was put through its paces.

A second emergency drill, in October 2006, was awaited with eager anticipation. The novelty of the first practice drill in 2005 having worn off, the time had come to find out whether people would know what to do in an emergency. The outcome was promising. Coordination and information systems worked well. The village communities knew where the evacuation routes and temporary accommodation centres were sited and performed their registration, first aid, organisational and rehousing duties to perfection. It was also necessary to establish how closely people in the immediate vicinity of the villages were involved in the practice drill.

The drill confirmed that people living along the Búzi were prepared to deal with emergencies. The project is sponsored and backed by village elders, mayors and the district president, and this has helped to make it a resounding success. The foundation was particularly pleased to note that the appointment of a new district president did not affect the level of support. The new administration has adopted the system as a best-practice model. The outgoing district president was so impressed with the flood-warning system that he plans to introduce the idea in Caia, his new administrative district, thus extending the impact of the foundation's work beyond the Búzi. He has already set up a local flood-warning team.

Together with our local partners, we compared three potential risk areas on rivers that regularly flood – the Zambezi, Pungwe, and Save. We finally decided in favour of urgent action on the Save. This is the most suitable site for a flood-warning system, when international aspects are also taken into account.

Evacuation and flood rescue drill on the river. In an emergency, people and their possessions must be taken to safety as quickly as possible.



Satellite image and hand-drawn risk map. Using modern technology, the risk and evacuation plans drawn up by the local communities can be verified to ensure that individual perceptions of the surrounding terrain are not significantly different from the reality.



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A new subproject focuses on maps of the Búzi area drawn by local people, which show danger zones and safe areas. It is important that people have access to accurate information so that they can help themselves in an emergency.

A subproject will now place the hand-drawn maps on a scientific footing. The maps will be checked using ultra-modern satellite- and computer-aided techniques (GIS) and amended if necessary. The benefit is that, as well as enhancing existing maps, the technique can also be used to prepare new ones. However, participative methods, like the hand-drawn maps, are essential since people are more likely to accept the early-warning system if they are directly involved and if their work is taken seriously. This also increases their awareness of their own environment.

The Mozambique flood-warning system is a prime example of how simple and effective projects can be. When the project was presented at the Third International Conference on Early Warning in Bonn in March 2006 and at other international conferences, it met with enthusiastic applause.



## We never thought of giving up

### Interview with Kerstin Anker and Ernst Frost

The objective of the WaterFoundation Ebenhausen, which was established in 2000, is to improve supplies of clean water by setting up hydrological structures tailored to people's lives, culture, environment, technical and financial means. One such scheme, the Eritrean fog nets project – which is supported by the Munich Re Foundation – ran into unexpected difficulties in 2006.

**What made you choose Eritrea as the focal point of the WaterFoundation's work?**

**Frost:** One of the WaterFoundation's primordial concerns is to provide local help in the world's poorest countries. We came to Eritrea in 2003, working with Capuchin nuns on a scheme for using donkeys to facilitate the onerous task of fetching water. I should point out that the drought periods in Eritrea are getting longer and the wells are gradually drying up. Even now, women and children in Africa have to walk for hours on end to fetch water for their families. The project received good coverage in the local press and as a result we got to know a lady from Eritrea who had been living in the Ebenhausen area for some time. She was a tremendous help to us when it came to understanding the mentality and culture and establishing contacts. In this way, we gradually became more involved in the country.

**Anker:** Before Eritrea, we tended to work in patchwork fashion, first supporting well-diggers in Bolivia for instance, and then perhaps a monastery in Nepal. However, we came to realise that it was better to concentrate on one thing at a time, because each country has its own specific characteristics. The foundation can only succeed in the long term if we understand and take due account of the local culture and mentality.

**Frost:** The fog nets idea was conceived on our very first visit to Eritrea. We were visiting another project when darkness fell and we suddenly found ourselves shrouded in thick fog. From then on, we started considering how the fog could be used to supply drinking water. We researched the subject on the internet and finally came across the FogQuest aid agency in Canada, with whom we got in touch.

**Anker:** By a stroke of good fortune, the law firm where I work does a lot of business in Canada, and so we arranged to meet FogQuest. I was impressed right from the start. FogQuest was determined to market the fog net technology, not for commercial purposes but in order to help people. Similar nets already existed in Yemen, for instance, and because Eritrea has similar climate conditions and the foundation was already involved there, the Eritrean fog net project began to take shape. Once we had found donors, we were able to start looking for locations that could be used in the evaluation phase.

**Frost:** With the support of the Eritrean aid organisation Haben, we organised the taking of measurements, such as wind and precipitation. Everything looked fine but, right in the middle of the evaluation phase, the government issued a proclamation which meant the end of our cooperation with Haben. To be able to continue, we had to find a national organisation which met the government's new requirements. After a lengthy search, we came upon Vision Eritrea.

**Anker:** We were no doubt helped by the fact that a presentation made by FogQuest to the Eritrean Water Resource Department was very well received. The Department realised that fog nets were a completely new resource with enormous potential for supplying water to people on the high, arid Eritrean plateau at little cost and without sophisticated technology.

Fog nets on the high plateau will capture fog which forms over the Red Sea. Test nets measuring just one square metre yielded 20 litres of drinking water a day throughout the November to March fog season.





37 **Kerstin Anker**, a partner and board member of the law firm Knorr Rechtsanwalte AG has also been on the Water-Foundation board since 2003, where she is responsible for legal issues as well as the fog nets project.

**Ernst Frost** has been involved in a variety of nature conservation projects since he worked as managing editor of natur+kosmos. He established the German "Bume fur Sarajevo" association in 1997. The association has planted a tree for each of the 78,000 children in Sarajevo. He founded the WaterFoundation in 2000 together with Henner Lang.

### Did it never occur to you to give up because of the difficulties in Eritrea?

**Frost:** We never doubted that the project would be completed. One of our colleagues was in the country at that time and, using his contacts, he was soon able to get in touch with Vision Eritrea, so that the transition went slowly but smoothly. Also, the people themselves were enthusiastic about our work, and it was and is still appreciated by the authorities.

**Anker:** The project never really hung in the balance, it was only delayed. We are pleased to be able to continue our work in Eritrea where we are still greeted with open arms. And when you meet the local people you feel you just have to help. Eritreans are proud and well-educated people. We help them to have confidence in themselves and to improve their quality of life. What particularly motivates us is the way that they themselves pull out all the stops to make the project work.

### How often do you go there?

**Frost:** Normally once a year. No doubt more in 2007 because a lot of things will just be starting up.

### What stage has the project now reached?

**Anker:** Now that we have found the best locations, the detailed planning has begun. We have put together a project proposal with Vision Eritrea and prepared a budget and now have to wait for the go-ahead. The Water Resource Department and the local authority have been involved since the beginning. Subsequently, it will be a matter of finding a cheap way to fly the nets from FogQuest's production centre in Santiago de Chile to Eritrea.

**Frost:** Incidentally, on the technical side, it took quite some time to develop the nets. To get the best yield, the mesh size and dimensions of the net have to correspond exactly. FogQuest has been working on this since about the mid-80s. Initially we want to erect 1,600 m<sup>2</sup> in all. The nets themselves cost very little but we hadn't realised how much the freight costs would be. We have now found an acceptable solution. Of course, in the long term, the aim is to produce the nets in Eritrea, if the situation permits.

**Anker:** Three people from FogQuest will set up the nets in the spring of 2007. The Director of FogQuest, Dr. Robert Schemenauer, will be in charge. The whole project, including the necessary cisterns and pipework, should be finished in 2007.

### Do the nets need special maintenance?

**Anker:** They have to be checked regularly, especially after strong winds. Normally, they should be all right for the next three to five years. After that, we may have to replace them.

**Frost:** Windstorm is the most common problem but there's not much else. The local people look after them well. To monitor the quality of the water, we want to take samples back at the very start to be checked in Germany.

### Who services the nets?

**Anker:** For each installation a locally appointed water committee is paid to organise the work. As is the case everywhere in Eritrea, water extraction is not free. Everyone makes a contribution, for instance by working for the water committee. The idea is that the water tax will yield a surplus in the first few years which we will use in the future, helped by the local people of course, to provide microcredits. And the water tax will help to spread the message of sustainability throughout the entire region.

Kerstin Anker and Ernst Frost, in the foreground, have been involved in the fog nets project for many years. The photo shows them with representatives of the German Embassy in Asmara.



## Tonga's early-warning system to go on air 2006 Foundation Prize

An important aspect of the work of the Munich Re Foundation is to promote leading-edge projects that tackle water, climate and vulnerability issues. Priority is given to those which bring about a direct improvement in living conditions. The 2006 prize was awarded to the Kingdom of Tonga for a radio-based early-warning system designed to prevent cyclones and floods turning into disasters.

Recent natural catastrophes have been dramatic proof that no country can consider itself safe. Natural events and catastrophes can strike anywhere and are a serious threat. Since large parts of South and Southeast Asia were devastated by a tsunami in December 2004, the world has recognised the role of early-warning systems in warding off disasters. Had such a system been operating at the time of the tsunami, countless lives might have been saved.

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**"Thanks to the foundation's award, we will be able to get things moving and provide an early-warning system for the outlying islands as well."**

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Tonga, which is located in the South Pacific, is highly susceptible to natural hazards. The Kingdom comprises more than 150 islands – 45 of which are continuously inhabited – and is regularly hit by tropical cyclones and floods. However, because the satellite system Tonga uses cannot function in high winds, the national disaster protection service has only limited information about natural hazards, and especially about cyclones. It is also difficult to alert people living in the more remote areas. To remedy this problem, Tonga's disaster management and meteorological services have launched an early-warning project which involves setting up a reliable communications network which will use high-frequency radio data circuits to provide accurate forecasts and broadcast the information throughout Tonga.

The project was presented at the Third International Conference on Early Warning (EWC III), held in Bonn from 27–29 March 2006. Organised by UN/ISDR (International Strategy for Disaster Reduction, Geneva) and DKKV (German Committee for Disaster Reduction, Bonn), the conference attracted some 1,000 participants from more than 140 countries. Early-warning systems were presented and discussed in the context of the conference motto "from concept to action" providing useful tools for the policy-makers. The aim was to formulate specific proposals for closing current gaps in early-warning systems.

Former US President Bill Clinton, UN Special Envoy for Tsunami Recovery, stressed the importance of the conference in the context of increasingly extreme catastrophes. Tragedies such as Hurricane Katrina, which devastated New Orleans in August 2005, and claimed over 1,300 victims, have left their mark. This is also true of the earthquake that struck Pakistan last October, and caused a death toll of nearly 90,000.

The Munich Re Foundation awarded the foundation's first prize at the conference. Seven project ideas were shortlisted out of the original 130. They were judged in accordance with the foundation's guiding principles. The €50,000 foundation prize was awarded to Tonga. The Kingdom was selected because the foundation felt that its project was best adapted to people's needs and that it could be in operation within a reasonable time. It is also well set out, effective and suitable for application elsewhere.

The prize money will be used to give Tonga an effective early-warning system by connecting it to the RANET-Pacific system, which uses special radio links that can relay forecasts and warnings at all times, even in severe storms. This was not the case with the satellite-based system.

Thomas Loster, Chairman of the Munich Re Foundation, explained the reasons for the choice: "Our primary concern was to close a gap in the warning system. Although there has been an increase in international efforts to improve early-warning systems, there are still blanks to be filled, especially in remote areas." Maliu Takai, Acting Director of the National Disaster Management Office in Tonga added: "Thanks to the foundation's award, we will be able to get things moving and provide an early-warning system for the outlying islands as well."

39 It was agreed with Maliu Takai that the prize would be paid in three instalments, the first when the milestone plan had been submitted and the second and third as the installation milestones were reached. Now that the Tonga Meteorological Service has identified suitable installation sites, the next step is to purchase high-frequency antennae – which sounds easier than it is. The antennae are not particularly robust and tests in Papua New Guinea and Vanuatu showed that they were exposed to the full rigours of the Pacific's tropical mari-time climate. It is hoped that the electronic equipment will be purchased and the antennae installed soon. The project is scheduled for completion over a period of 12–18 months – hopefully before the next major cyclone strikes.

## Other foundation projects in 2006

### **Water and health: Research project in one of South India's major cities**

Start-up financing for a research project being carried out by a student at the Geographic Institute of the University of Bonn. The project looks at ways to reduce health risks for the poor in cities like Chennai in India.

### **Seminar on climate- and water-related risks**

Seminar on climate- and water-related risks organised as part of the Stockholm Water Week 2006 in conjunction with representatives of the Potsdam Institute for Climate Impact Research, World Conservation Union (IUCN), the United Nations University, Institute for Environment and Human Security and Munich Re's Geo Risks Research unit. The speakers discussed strategies for coping with the effects of climate change on water – as a resource and risk factor.

### **Voluntary ecological service in Tanzania**

Sponsorship of a schoolgirl spending a year working on a voluntary basis at a vocational school in Mafinga, Tanzania, where the syllabus includes renewable energies.

### **Climate change dialogue**

Support of an event organised by WECF e.V. (Women in Europe for a Common Future) and Green City e.V. The international climate conference in Nairobi in November 2006 gave rise to a discussion on energy conservation, with invited experts.

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# Publications

Publications can be ordered on the Munich Re Foundation website.

**Report**  
**Microinsurance Conference 2005**  
**Making insurance work for the poor:**  
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Edited by  
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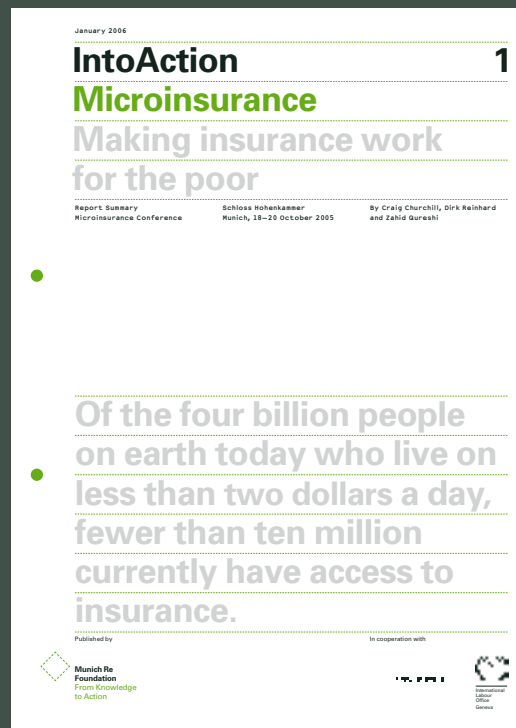
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**Protecting the poor – A microinsurance compendium**

Edited by  
Craig Churchill

Published by the ILO and the Munich Re Foundation

Text in English  
654 pages  
ISBN 978-92-2-119254-1



## 2007 overview

8 March  
Kick-off: Project "Climate change and poverty" with Misereor, the Potsdam Institute for Climate Impact Research, the Institute for Social and Development Studies at the Munich School of Philosophy

7–8 May  
World Bank regional microinsurance workshop in cooperation with the CGAP Working Group on Microinsurance and the Munich Re Foundation, in Rio de Janeiro, Brazil

1 June  
Workshop of schools competition "GO CLEAN! Business Award" on the occasion of the meeting of the EU Environment Ministers in Essen

22–27 July  
Second Summer Academy on social vulnerability: "Mega-cities as hotspots of risk" at Schloss Hohenkammer

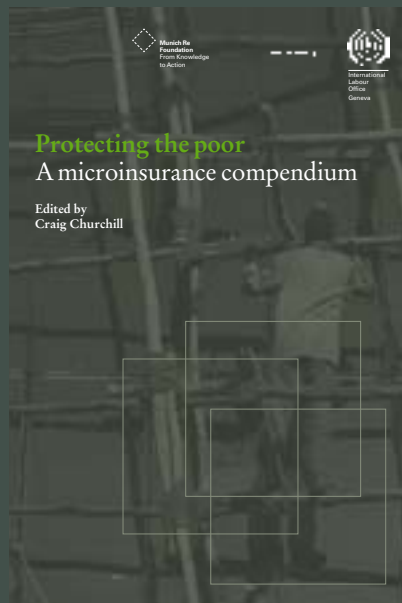
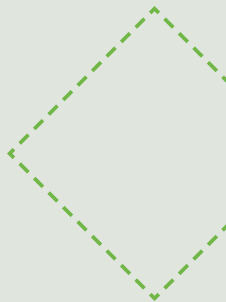
15 August  
"Water and climate day" together with other organisations, World Water Week, Stockholm, Sweden

From September, Dialogue forums: On the topic of "Living in Munich in 2030" (to be confirmed)

13–15 November  
Third International Microinsurance Conference "Making insurance work for Asia", Mumbai, India

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to Action

2005 report



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