

**Munich Re  
Foundation**  
From Knowledge  
to Action

2019 report





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Review of  
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Cover: A family in the Lakshmipur district of Bangladesh, on the edge of an eroded riverbank, looks worriedly into the distance. Erosion is a widespread phenomenon in the country. In many regions whole villages are endangered by it.



# Dear Readers,

“You have stolen my dreams and my childhood with your empty words!” Greta Thunberg’s angry speech to representatives of the United Nations in September was just a flash in the storm of the discussions on climate change. 2019 is likely to go down in history as the “climate year” – the topic shaped demonstrations, debates and politics around the globe. Munich Re Foundation has been involved from the outset and is now focusing even more strongly on climate protection (essay on page 4 and projects on pages 12, 18 and 38).

Climate risks were a focal point at our 15th International Conference on Inclusive Insurance in Dhaka (page 25 ff.). The Prime Minister of Bangladesh, Sheikh Hasina, welcomed almost 600 participants from more than 40 countries. Our field trip to the north of the country has shown that government stimulus can also reach the poorest of the poor (page 28).

Our Dialogue Forums “Poor rich world” in Munich focused on the causes of and fight against poverty. We discussed international aspects, but also took a close look at the Bavarian capital together with the mayor of Munich. Our Summer Academy in Ghana dealt with rather unhealthy urban development. Some 40 young scientists, politicians and decision-makers analysed the causes of high-risk demographic developments – for example, informal urban sprawl in Accra combined with environmental pollution (page 17). The Academy’s findings support the work of the UN Climate Secretariat.

After the project is before the project: Our fog net project in Morocco was successfully completed, now we have launched a new project together with the WaterFoundation. It started in 2019 at the foot of the eastern Andes in Bolivia (page 21), where people face a severe water shortage. One reason for us to expand the water supply as quickly as possible with new fog collectors.

I wish you an inspiring read.  
Thomas Loster



**SHEIKH HASINA**  
The Prime Minister of Bangladesh opened the 15th International Conference on Inclusive Insurance in Dhaka. She also asked the international experts for advice on better cooperation and products.  
Page 25



**ROBERT HABECK**  
The national chairman of the Greens was a speaker at our Dialogue Forum in April. He pleaded for the state to organise a funded pension scheme. The 2019 series revolved around issues relating to poverty reduction.  
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**NANDAN MUKHERJEE**  
The engineer at the University of Dundee won the RISK Award 2019. Houses in flooded areas in Bangladesh are to be made resistant with his “Floating Home” concept.  
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Fridays for Future! Climate change was a hot topic in 2019, with demonstrations all over the world calling on politicians to act more quickly and effectively. The picture shows a major rally in London on 20 September 2019.









**LIFE ON THE BRINK**

Erosion is already threatening the livelihoods of many people – not only in Bangladesh. If we do not take countermeasures, ever-increasing climate change will put millions more people worldwide at risk.

# Climate change, climate protection: We have to do more

An essay by Thomas Loster

The phenomenon of climate change is not new. It has been seen as a serious threat for around 30 years now. But 2019 saw the subject become a matter of unprecedented concern. Extreme weather and environmental activists across the world have helped to spark a public debate on climate. Since then, climate protection and adaptation have become dominant topics in politics, business and in the public eye. One conclusion from all this is that we really need to do more.





WE DON'T  
HAVE TIME



We are running out of time on climate change. The later measures are taken against climate change, the more dramatic the consequences – and the costs. The picture shows a young demonstrator in Erlangen at a Fridays for Future rally.



## “We have to do more. What is meant by we? Everyone.”

Carbon dioxide (CO<sub>2</sub>) has the potential to dramatically change our climate. This has been known since at least 1896, when Svante Arrhenius published his calculations on the effect of carbon dioxide on temperatures in the atmosphere. In a 1973 brochure on flood risks, our founder, Munich Re, expressed its concerns about the effect of increasing CO<sub>2</sub> concentrations. And in the 1980s, the topic became a matter of (UN) global policy. After a seemingly endless series of climate negotiations, the 2015 Paris Climate Agreement was then celebrated as a major breakthrough. In November 2019, Germany adopted new “ground-breaking” climate legislation.

### OBSERVATIONS AND TIMELINES

Weather extremes are indeed becoming more frequent – it is not just our perception of things. The 2017 hurricane season produced a series of unprecedented historic superlatives. Giant, multi-year forest fires, such as those witnessed in California, Brazil, Australia and elsewhere, underline the fact that the drought and fire risk has increased worldwide. Mozambique was submerged twice by floods in 2019, and shortly afterwards the country was devastated in quick succession by cyclones Idai and Kenneth. Warm sea surface temperatures are producing events with particularly heavy rainfall.

And severe droughts are impacting farming on every continent. The pupils’ initiative, Fridays for Future, has mobilised the masses internationally, and there are now groups called Parents for Future, Scientists for Future and many more.

Scientific publications on climate change, for example by the International Panel on Climate Change (IPCC), underline the importance of this movement. In 2019, the IPCC produced two equally alarming reports: one was on climate developments on land, and the other on global ice and the oceans. All the reports detailed alarming trends, such as the measurable and foreseeable ice melt, and the rise in sea levels. Comparatively speaking, current social developments are probably having a bigger impact than scientific findings. It is not just about a girl from Sweden sailing to the climate summit in New York on a racing boat.

### CLIMATE POLICY

The Paris Climate Agreement was without doubt a milestone. In 2015, 196 countries and the European Union set themselves the goal of limiting global warming to less than two degrees Celsius compared with pre-industrial levels. But if you look at the implementation plans more closely, you start to worry. There will be no checks until the 2020s to see whether the national climate protection commitments and their implementation are working. If they are





THOMAS LOSTER

The Chairman of the Munich Re Foundation is an expert on climate change and disaster prevention. He also shares his knowledge in lectures and educational projects of the Munich Re Foundation.

not, they will be amended. Our planet is losing valuable time. It is clear that global solutions are difficult to implement. But even in countries like Germany, once a pioneer in the field of climate protection, not nearly enough is being done. The country has fallen well short of its 2020 climate targets. Will it set the bar higher? In November 2019, the German climate protection law was approved. It penalises short-distance commuters and benefits long-distance commuters – at least until 2025. And on the subject of transport: the black-sheep sector when it comes to achieving significant carbon savings is making little progress. And the expansion of wind power is stagnating in the midst of petty squabbles and Nimbyism.

### SO WHAT CAN WE DO? – MUCH MORE!

The following sentence sounds trite and simplistic – yet it is so important: We have to do more. What is meant by we? Everyone. From the individual as a member of a family and of society, to groups, associations and local authorities, all the way to national and international politics at every level. Good regulatory policies – from local to global – can substantially curb climate change. It needs to be an integral consideration in the decisions taken by everyone involved. There is evidence that rigorous regulatory policy can work: on a global level, we have the example of the CFC ban

at the end of the 1980s, and at national level the 2007 smoking ban in Germany. So should you be taking cold showers or feel guilty when you eat a hot dog? No, of course not. Macrosocial processes, an enjoyment of life and having a genuine understanding of sustainability in practice all present good opportunities. There is no question that the individual plays an important role. But we can only meet the challenge of climate change as a global community. “Objection!”, many people will cry. “Politicians cannot sort it out, and key players like the US and Brazil are pulling out of the climate agreement. It will never work!” But climate-sceptic politicians are not elected for life and if society takes the lead, politicians will have no choice but to follow. This is evidenced by the soft revolutions seen all over the world. Will business or innovation provide the answer? Many issues at this time have no solution in sight. Possible answers, such as the expansion of hydrogen technology, are often considered too expensive. But we should not rely on good fortune or chance inventions, like the critical discovery of penicillin or X-rays. We need to do more for climate protection – in a gradual and measurable way. Identify, establish ambitious targets, implement measures, get it done. Otherwise, the world may well blow up in our faces.



# Climate change and education

## 2019 Dialogue Forums

### *"Poor rich world"*

Munich, January – May 2019  
5 events with around  
1,000 participants

### Dialogue Forum special

### *"Carbon charges and mobility in the urban environment – What would be the benefits of a climate tax?"*

Munich, 22 October 2019  
100 participants  
Project partner: Network  
Klimaherbst München e.V.

### *"Socially committed in Munich – For social justice in a wealthy city"*

Munich, 6 November 2019  
100 participants  
Project partner: Social Entre-  
neurship Academy, Strascheg  
Center for Entrepreneurship at  
the Munich University of  
Applied Sciences Munich

### PAREMIA – New partnerships for climate protection

*Analysis of the Nationally  
Determined Contributions  
(NDCs) of elected countries and  
the development of proposals  
for more effective measures*

Project start: August 2019  
Project partner: Germanwatch e.V.

## School projects

### *Energy School Munich*

Munich, 2018/2019 school year  
360 participating pupils from  
primary and secondary schools  
Project partner: Green City e.V.

### 2019 Summer Academy

### *"Global risk trends – climate and demographic change"*

Accra, Ghana  
6 – 11 October 2019  
40 participants, 20 countries:  
Politicians, scientists, journalists  
and NGO employees  
Project partners: UNU-EHS,  
UNFCCC, LMU, UNU-INRA

## Joint university projects

### *University of Applied Sciences Munich: Seminar on "Water, climate, environment – sustain- able management strategies for global challenges"*

Munich, ongoing seminar in winter  
and summer term  
15 – 18 students

### *Eberswalde University for Sustainable Development: Themed week of the "Global Change Management" Master's course*

Munich, 8 – 12 April 2019  
20 young scientists

### *Project seminar at the University of Erlangen, Department of Geography: Project seminar "Nature-based solutions for climate protection"*

Erlangen, 3 – 7 July 2019  
10 students

### *Bonn-Rhine-Sieg University of Applied Sciences: Social Protection Master "Climate Risk Insurance"*

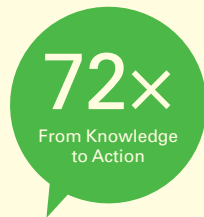
Sankt Augustin,  
15 – 17 September 2019  
15 international young scientists

### *Seminar for rural Development (SLE) at the Humboldt University of Berlin, "Development and Insurance Mechanisms"*

Berlin, 14 October 2019  
20 participants

### *UNU-EHS – Rheinische Friedrich-Wilhelms University Joint Master: Seminar "Climate Risk Insurance"*

Bonn, 31 October 2019  
25 international Master students



### Presentations on foundation's topics

72 specialist presentations  
from the foundation staff at  
universities and schools, at  
conferences and other events



UNIVERSITY OF EBERSWALDE  
Study week of the Master's programme "Global Change Manage-  
ment" in April 2019. Bottom row in the middle: the programme  
coordinator of Eberswalde Christoph Nowicki.

**"If Germany is to achieve the Paris  
climate protection goals, greenhouse gases  
must be reduced by at least 54 %  
or 466 million tonnes by 2030.  
With the current measures we will achieve  
a maximum of one third of this."**

DR. JÖRG LANGE  
Chairman of the association "CO<sub>2</sub>Abgabe e.V."





**ROBERT HABECK**

The national chairman of the Green Party in conversation with the book author Kristina Vaillant and Alexander Hagelüken of the Süddeutsche Zeitung. One topic: fair and sustainable pensions in Germany.

## 2019 DIALOGUE FORUMS

### Poor rich world

Understanding poverty in order to combat it – the 2019 Nobel Prize in Economic Sciences was awarded for research explaining the diverse links between poverty and education or health. The 2019 Dialogue Forums were also dominated by the topic of poverty. As well as the international aspects, we discussed the ways in which poverty manifests itself in a rich country like Germany.





### BONIFACE MABANZA

The theologian and philosopher is a proven expert on development policy in Africa and was one of the speakers at the Dialogue Forums. He criticised the existing trade and financial policies. In his opinion, it widens the gap between rich and poor.

Poverty is a global problem, and poses one of the biggest challenges for developing countries. Almost 740 million people live in extreme poverty on less than US\$ 1.90 a day. Frequently, it is women who suffer the most. There are many different factors that cause extreme poverty. In many cases these factors are mutually dependent and intensify each other, forming a cycle (see diagram). First and foremost, we need to eradicate a fundamental injustice: "If we cannot succeed in reducing the inequality in the world, we may as well not even start trying to combat poverty and hunger," warned Uwe Kerkeritz, Vice-Chairman of the Committee on Economic Cooperation and Development, at the opening evening of the 2019 Dialogue Forums. He called for a more equitable economic and social system. If we want to combat global poverty, he said, a global financial system needs to be created that is fair for everyone.

### VICIOUS CIRCLE OF POVERTY

"The likelihood of poverty and conflict increases where there are great inequalities," argued Jörg Baten, Professor of Economic History at the University of Tübingen. He believes that Europe has a fundamental obligation given its colonial history and the fact that it left many countries in disarray when it withdrew from these colonies. Up to now, efforts to combat poverty, such as those called for in the United Nations' Sustainable Development Goals (SDGs), are a long way from bearing fruit in every country. But change and progress are possible. Jann Lay, from the German Institute of Global and Area Studies, pointed out that the geography of poverty had changed, as many countries in southeast Asia have managed to significantly reduce their levels of poverty in recent years. In contrast, many poverty hotspots remain in central Africa. But even there, the rich social class is expanding in almost every country. Surprisingly, wealth and poverty are often closely linked.

### CLIMATE CHANGE IS EXACERBATING THE PROBLEM

The fact is that climate change has exacerbated the problem of poverty across the world. "In 2017, more than 150 million people suffered in heatwaves, and billions of work hours were lost. This was reflected in lower agricultural yields," explained Sonja Ayeb-Karlsson from the University of Sussex. She said that, in many developing countries, it was women who suffered most from poverty. Small farmers in these countries were also seriously affected by climate change. This significantly increases poverty, particularly in rural areas. Regina Birner from the University of Hohenheim, pointed out that the vast majority of low-income and food-insecure people still live in these rural areas. In such difficult and extremely uncertain situations, people frequently pin their hopes on migration. Unfortunately in vain, in most cases.



“While they may earn more money in cities, they often have to perform dangerous work, or can become sick and need medicine,” said Sonja Ayeb-Karlsson. So in the end, they often have a lower quality of life than before.

### OLD-AGE POVERTY ON THE INCREASE IN INDUSTRIALISED COUNTRIES

But in many industrialised countries, inequalities in income and the distribution of assets also pose a growing problem. Journalist and author, Kristina Vaillant, reminded the audience that poverty was not a problem for specific risk groups, but one that affected all of society. One example of poverty in Germany is that the state pension is frequently no longer enough to live on in old age. Even the Riester pension has not lived up to expectations. High administrative costs and low interest rates have squeezed returns to the point where savers have little incentive.

Robert Habeck, leader of the political party, Alliance '90/The Greens, argued that the government should shift to fully funded pension provision, such as they have in Sweden.

### HOUSING SHORTAGES

A further problem that concerns an ever-greater number of people is the cost of apartments in many cities and conurbations. Mayor of Munich, Dieter Reiter, pointed out that the city was doing more than ever before to construct affordable housing. With the development of new suburbs, however, he said that he had encountered strong resistance from residents who would suffer as a result of the construction work. He added that there had been many mistakes made with social housing over decades in many German cities, and these had proved quite difficult to remedy.

Karin Lohr, CEO of the Munich street newspaper, BISS, called for greater protection for the vulnerable. “When it comes to people’s basic needs – such as housing, water and air – politicians must create the structures needed to protect the weaker members of society. She said the government needed to focus on the constitutionally guaranteed right to adequate housing if it was to prevent a widening of the social gap.

At the same time, Reiter was convinced that local politicians would be unable to solve the problems in Munich on their own without federal assistance from Berlin. And that might be some time in coming. In the meantime, he said, all one could do was hope that the population forecasts for Munich had been exaggerated. An increase in the city’s population from the present 1.56 million to 1.85 million is predicted by the year 2040.

*You can find a detailed summary of the 2019 Dialogue Forums on our website and in our publication “Positionen” (German).*

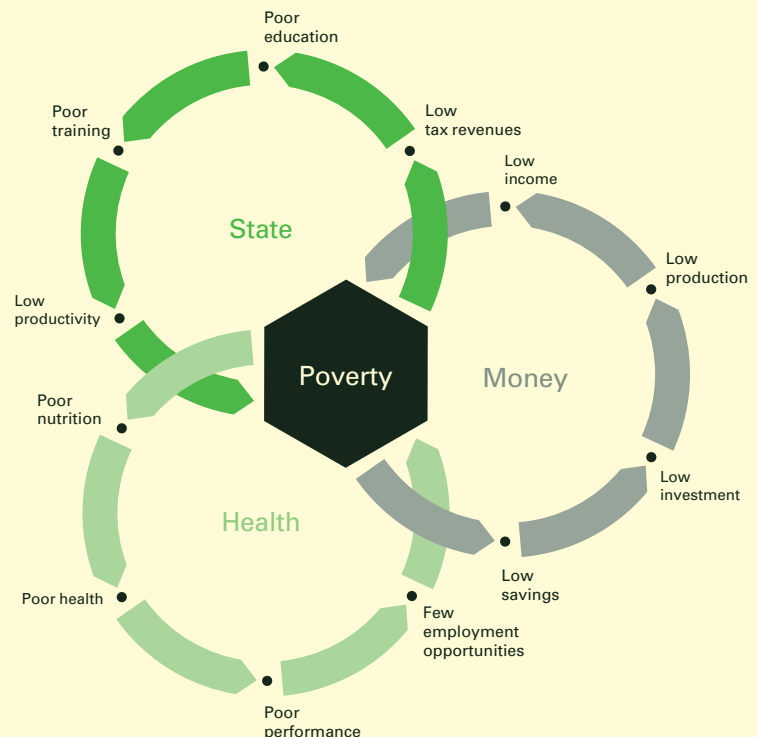
“Poverty is not a problem for specific risk groups, but one that affects all of society.”

“Global poverty –  
The world in the poverty trap?”  
24 January 2019

### VICIOUS CIRCLE OF POVERTY

Almost 740 million people live in extreme poverty. They have less than US\$ 1.90 a day to live on. Often it is women in particular who suffer. There are many factors that cause extreme poverty. They are interdependent, reinforce each other and form a cycle.

Poverty has many causes. The 2030 agenda hopes to end extreme poverty by 2030.  
Source: Federal Agency for Civic Education (2005)





## SPECIAL DIALOGUE FORUM FOR THE “MÜNCHNER KLIMAHERBST” EVENT Carbon charges and mobility in the urban environment – What would be the benefits of a climate tax?

Under the heading “The Mobile City”, the Münchner Klimaherbst 2019 event focused on various aspects relating to climate change and sustainable mobility. This is because the transport sector poses a particular headache for climate protection measures. While carbon emissions in Germany have fallen in almost every other area, there has been no net reduction in the transport sector for almost 30 years. Brigitte Knopf, General Secretary at the Mercator Research Institute on Global Commons and Climate Change (MCC) warned that time was running out and argued in favour of a carbon charge. She said this would help achieve three objectives at once:

“We would make fossil fuels more expensive, and renewable energies more attractive, stimulate investment in low-carbon technologies, and we could return the revenues to the general public, or invest them in expanding the public transport system.” However, she believed the carbon charge approved by the federal government in its climate package (initially ten euros per tonne from 2021) is not high enough.

Jörg Lange, Chairman of the association “CO<sub>2</sub>Abgabe”, was also convinced that the federal government’s climate package did not go far enough. “If Germany is to achieve its Paris climate protection targets,” he said, “it needs to reduce its greenhouse gases by at least 54%, or by 466 million tonnes, by 2030.”

He believed we would achieve a third of this reduction at best under the current measures. Sandro Kirchner, a member of the Bavarian State Parliament, took a different view: “Industry must have the opportunity to shepherd the change, so that people can keep their jobs,” he argued. While he was also in favour of a carbon charge, he believed it should be applied globally to all sectors. So the discussion again illustrated that there is no shortage of goodwill to tackle global warming. But vigorous debate on the distribution of costs is likely to continue for some time, and climate protection will not come free of charge. One thing is certain: if the climate package the federal government approved in 2019 is not revised, Germany’s climate goals will be at risk.

### EXPERTS IN DIALOGUE

Sandro Kirchner, member of the Bavarian parliament (left), discusses fair CO<sub>2</sub> pricing with Brigitte Knopf (right) and Jörg Lange (2nd from right). At the microphone, moderator Matthias Altmann from Green City, Munich.







### EXPERIENCING AND UNDERSTANDING ENERGY

For the 10th anniversary of the energy school there was a new energy bicycle. A pupil generates electricity on this trimming bike and learns how much power it takes to make a lamp glow.

## ENERGY SCHOOL MUNICH celebrates its tenth anniversary

It is ten years since the Munich-based environmental organisation Green City e.V. launched the educational project, Energy School Munich. Since 2009, around 9,600 school pupils have taken part in its interactive workshops on topics relating to climate protection, energy conservation and renewable energies. Munich Re Foundation has been supporting the project since 2011 and congratulates the association on a decade of successful work.

Equipped with a bicycle power generator, solar cooker, kettle, thermal imaging camera and lots of other exciting props, the environmental consultants from Green City visit primary and secondary schools in Munich with the aim of turning children and young people into budding energy researchers.

Depending on the pupils' age and the type of school, there are two modules to choose from. The first module, "Sun full of energy", is aimed at school grades 2 to 7 and features three varied practical workshops. The second set of "Energy with future" workshops are designed for pupils in grades 7 to 9, and also provide information on career prospects in the field of climate protection. Up to ten classes in each school can take part in the two- to four-day projects, and experience the complex topic area of energy, while researching and conducting their own experiments.

Even after ten years, the project team from Green City is still full of energy and enthusiasm on its school visits, with a wealth of expertise and experience under their belt.

A further advantage is that they are able to constantly develop and improve the learning content. The interactive workshops, excursions and wide range of work materials are closely connected with the everyday lives of the children and young people, and form a perfect complement to climate- and energy-related topics in the school curriculum. The qualified environmental science trainers also show the teachers and pupils ways in which they can make a personal contribution to ensuring a liveable future – on a daily basis.

Here at the foundation, we are pleased that our support has helped make these great workshops possible each year in Munich schools.



# PROTECTING AGAINST RISKS AND CREATING SOCIAL BENEFITS

## One of the topics at our university workshops

As part of its collaboration with universities, Munich Re Foundation holds courses for students and young scientists at colleges around Germany. In partnership with a total of six universities, current topics of the foundation and the insurance industry are dealt with. In 2019, resilience bonds and social impact bonds featured high on the list of topics.

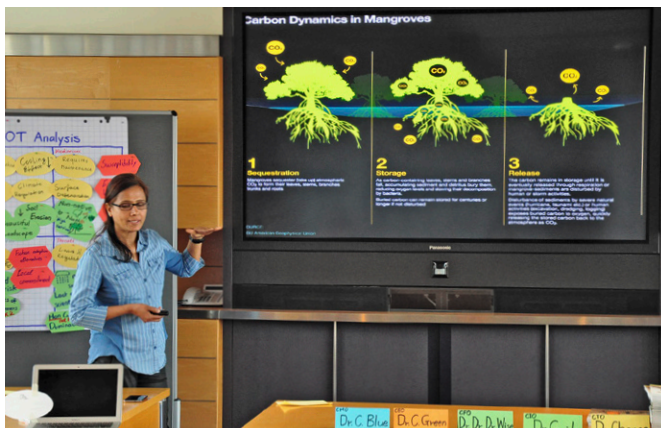
The idea of providing an island with financial protection against major storm surges while at the same time building up natural defences against flooding was a popular one among the students at our partner universities. In 2019, we held two weeks of seminar with the Eberswalde University for Sustainable Development and the Friedrich Alexander University (FAU) of Erlangen-Nuremberg in which young scientists dealt with current issues linking climate change and innovative insurance solutions.

### BONDS FOR A GOOD CAUSE

Catastrophe bonds, or “cat bonds”, are a tried-and-tested tool of insurers and investors. Since the 1990s, these bonds have enabled very large amounts of insurance – totalling several hundred million US dollars – to be provided for natural disasters. Cat bonds are very widespread in Mexico, Japan and the US. They cover high losses caused by earthquakes, hurricanes or storm surges. The resilience and social impact bonds developed more recently are also related to cat bonds. With the new bonds, however, it is not just a matter of financial compensation. They also facilitate the implementation of measures to reduce risks and bring social benefits. Thus, for example, a city on the coast is not only protected financially against the risk of flood, but at the same time a protective wall is built, which step by step – often over years – steadily reduces the risk of flooding.

Social impact bonds can be used to optimise health services. With these bonds, donors for instance invest in hospitals. Where health in a defined region is measurably improved, high returns are achieved, but where no improvement is seen, investors lose money.

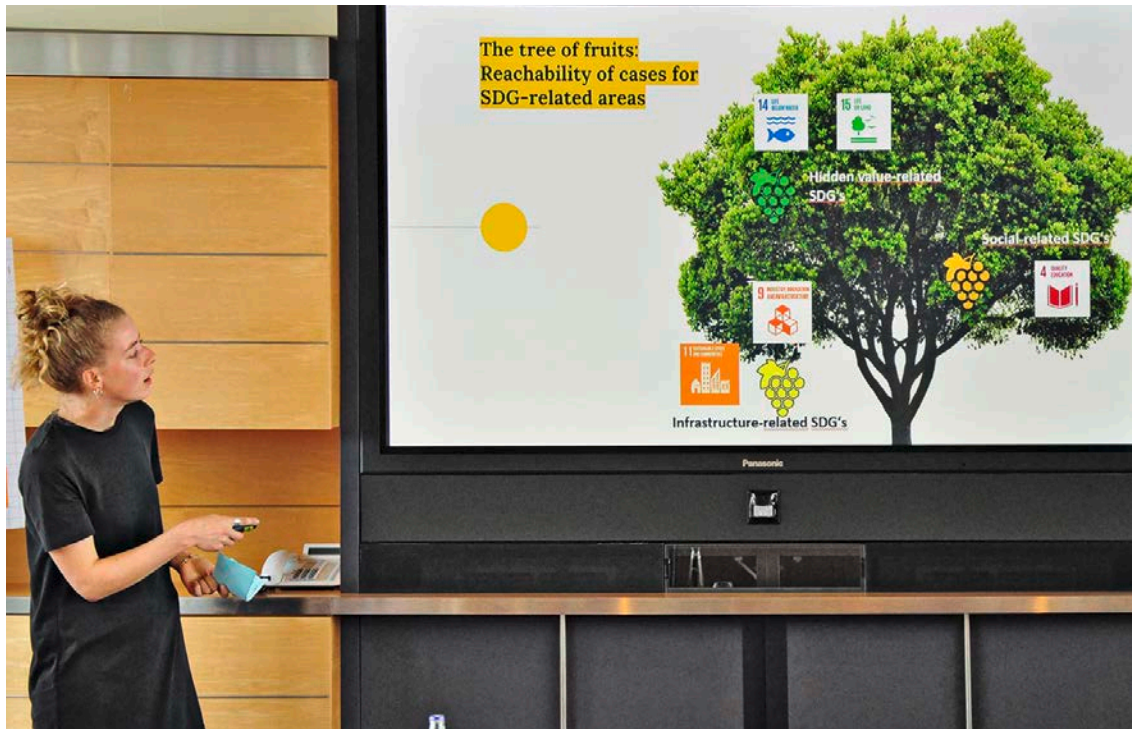
The seminar weeks give participants an insight into the complexity of insurance models and sustainability. Dealing with very different groups of stakeholders, including from a funding perspective, is particularly challenging – but also rewarding. It soon becomes clear that innovative insurance solutions involve much more than just cash flows. They promote sustainable development on a large scale.



### UNDERSTANDING CLIMATE CHANGE

Mangroves not only protect coasts, they also absorb CO<sub>2</sub> from the air (left). Harald Lesch (2nd from left), Cecilia Scorza (middle) and Moritz Strehle (right) present a climate case for schools. With experiments, processes in the atmosphere can be explained in a comprehensible way.





### SUSTAINABILITY IN EDUCATION

During the seminar week of the Master's programme "Global Change Management", a student from the University of Applied Sciences Eberswalde explains in a vivid way how the sustainability goals of the UN (SDGs) can be achieved.

## JOINT UNIVERSITY PROJECTS

### Many questions, many solutions

Munich Re Foundation tackles a wide range of subjects in its training programmes: disaster preparedness, climate change, environmental protection, water, and insurance solutions – most of them in the cause of combating poverty. Climate risks and how to solve them are topics that are assuming ever-greater importance. In 2019, the topics dealt with were:

#### *Nature-based solutions for protecting the climate*

Forestry and agriculture, and other measures like the preservation of mangrove forests, play an important role in creating carbon sinks and protecting the climate. How achievable are the approaches discussed?

#### *Loss of species and liability*

Whether we are talking about the tobacco industry or the negative consequences of climate change, liability issues and liability lawsuits are fast gaining in importance. How should loss of biodiversity be viewed in this context?

#### *CO<sub>2</sub> certificates for the agricultural and forestry sectors*

Agriculture and forestry have huge potential as carbon sinks. What mechanisms are conceivable in the area of CO<sub>2</sub> certification or emissions trading? Is the topic of relevance for the insurance industry?

#### *Resilience bonds and social impact bonds*

These relatively new bonds can have a strong regional impact by reducing catastrophe risks or promoting social improvements. (See left page for more details)

#### *Climate risk insurance in developing and emerging countries*

Climate is playing an increasingly important role in insurance solutions designed to combat poverty (inclusive insurance). For example, when it comes to food security issues or extreme weather. What approaches are currently being discussed internationally?

#### *Global policy frameworks and their implications*

In 2015, important new global policy rules and objectives were laid down: the Sendai Framework for Disaster Risk Reduction, the Sustainable Development Goals (SDGs) and the Paris Climate Agreement. These are aimed at achieving better disaster preparedness, global sustainability and climate protection. Where are there potential and opportunities for action, also for the insurance industry?





#### TOXIC WASTE DUMPS

The participants of the Summer Academy 2019 inspected one of the most toxic landfills in Africa. In Agbogbloshie in Accra all kinds of waste are disposed of. Huge amounts of electronic waste are incinerated, toxic clouds of smoke drift through the air.

## 2019 SUMMER ACADEMY Population growth – an underestimated factor in the climate debate

Climate change brings enormous risks, particularly for vulnerable people and social systems. The danger posed by a natural event, the exposure of the society affected and its vulnerability – in other words the susceptibility of people, societies and infrastructure to potential losses – determine the extent of risk in this context. One critical factor that has not been adequately considered up to now is population growth.





### SOLUTIONS FOR CLIMATE POLICY

Koko Warner from the UNFCCC in Bonn outlines together with Benjamin Delali (University of Accra) the roadmap for UN climate policy. Around 40 young scientists worked out how the national climate adaptation plans can be made more sustainable.

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**“Sustainable solutions for climate change can only succeed if adequate allowance is made for demographic change.”**

Risk models set out how a country should best adapt to changes in its risk situation. One drawback with these models is that they do not adequately reflect all the risk drivers involved. In other words, the national adaptation plans (NAPs) are sometimes based on unrealistic future scenarios. For example, the enormous influence of demographic change is often underestimated. At the 2019 Summer Academy in Accra, we looked at this subject in detail and examined how the influence of demographic change could be better integrated into the multilateral United Nations Framework Convention on Climate Change (UNFCCC).

### ACCRA IS BURSTING AT THE SEAMS

Accra, the capital of Ghana, is a rapidly growing city with some 1.8 million inhabitants. Accommodation is expensive and difficult to find, leaving many new arrivals with little option but to head for Agbogbloshie, a densely populated shanty town in the city. The new arrivals include subsistence farmers, for example from the north of Ghana, who are no longer able to farm in their own regions because of an increasing number of droughts.

Agbogbloshie extends along the banks of a brackish lagoon. It is tolerated by the city authorities, but has inadequate urban infrastructure and its inhabitants are exposed to numerous risks.

Agbogbloshie is not just notorious as a “toxic city”, where electronic waste, most of it from North America and Europe, has been accumulating for years on a giant landfill. In addition to the health risks from the toxins that contaminate the air and soil, the area is also at high risk from flooding. It is built on sediment from a lagoon. Prior to development, this provided natural flood protection for the surrounding city. Today, the area becomes flooded in extreme rainfall events, and waste collects under the bridges that span the lagoon, forming a type of artificial dam that prevents the efficient run-off of rainwater or flood waves. The population’s vulnerability to climate risks, in this instance flooding, is increasing against the background of more frequent extreme rainfall events in Ghana. This example highlights the immense population pressure that Accra is facing, as climatic changes pose an increasing threat to people in both rural and urban environments.

### POLICY BRIEF FOR THE CLIMATE SUMMIT

Matthias Garschagen (Ludwig Maximilian University of Munich), Koko Warner and Paul Desanker (both from the UNFCCC Secretariat) agreed that existing UNFCCC processes do not give sufficient consideration to the demographic factor. They commended the Academy for its efforts to sensitise decision-makers to this subject and ensure that greater consideration is given to the risks for planning purposes. To this end, the participants at the Summer Academy prepared the wording for a policy brief. Its central argument is that sustainable solutions for climate change can only succeed if adequate allowance is made for demographic change.

*The 2019 Summer Academy was jointly organised by Munich Re Foundation, the UNU-EHS in Bonn, LMU Munich and the UNU-INRA Ghana in partnership with the UNFCCC Secretariat. The excursion to Agbogbloshie received substantive support from the NGO People’s Dialogue and was prepared with assistance from staff at the World Bank.*





WAKE UP, THE EARTH IS BURNING!  
A wake-up call that was omnipresent at many demonstrations  
for climate protection in 2019.

## NEW PARTNERSHIPS FOR CLIMATE PROTECTION

### Time is short

At this present time, none of the G20 group of industrialised and emerging countries is on track to meet its climate goal of reducing carbon emissions in order to limit global warming to 1.5 °C. Our project “Partnerships for ambitious resilience and mitigation action – PAREMIA” aims to analyse the climate protection targets of different countries, and highlight possible ways to make improvements.

## Climate change and education

Together with the development and environmental organisation, Germanwatch e.V., Munich Re Foundation is making a further contribution to more efficient climate protection. In summer 2019, we launched the initiative PAREMIA. As part of this project, Germanwatch will analyse the nationally determined contributions (NDCs) of selected countries, and present proposals for more efficient and more ambitious measures. These might include a transfer of knowledge or technical expertise, or take the form of policy consultations.

The analysis and development of recommendations for action is carried out in consultation with the relevant ministries in Germany, the Federal Ministry for Economic Cooperation and Development (BMZ) and the Federal Ministry for the Environment (BMU).

These ministries have already identified roughly a dozen countries for climate protection partnerships to help implement the Paris Agreement. They are South Africa, India, Vietnam, Mexico, Colombia, Indonesia, Ethiopia, Ivory Coast, Peru and Brazil, with the possible addition of Morocco and Kenya.

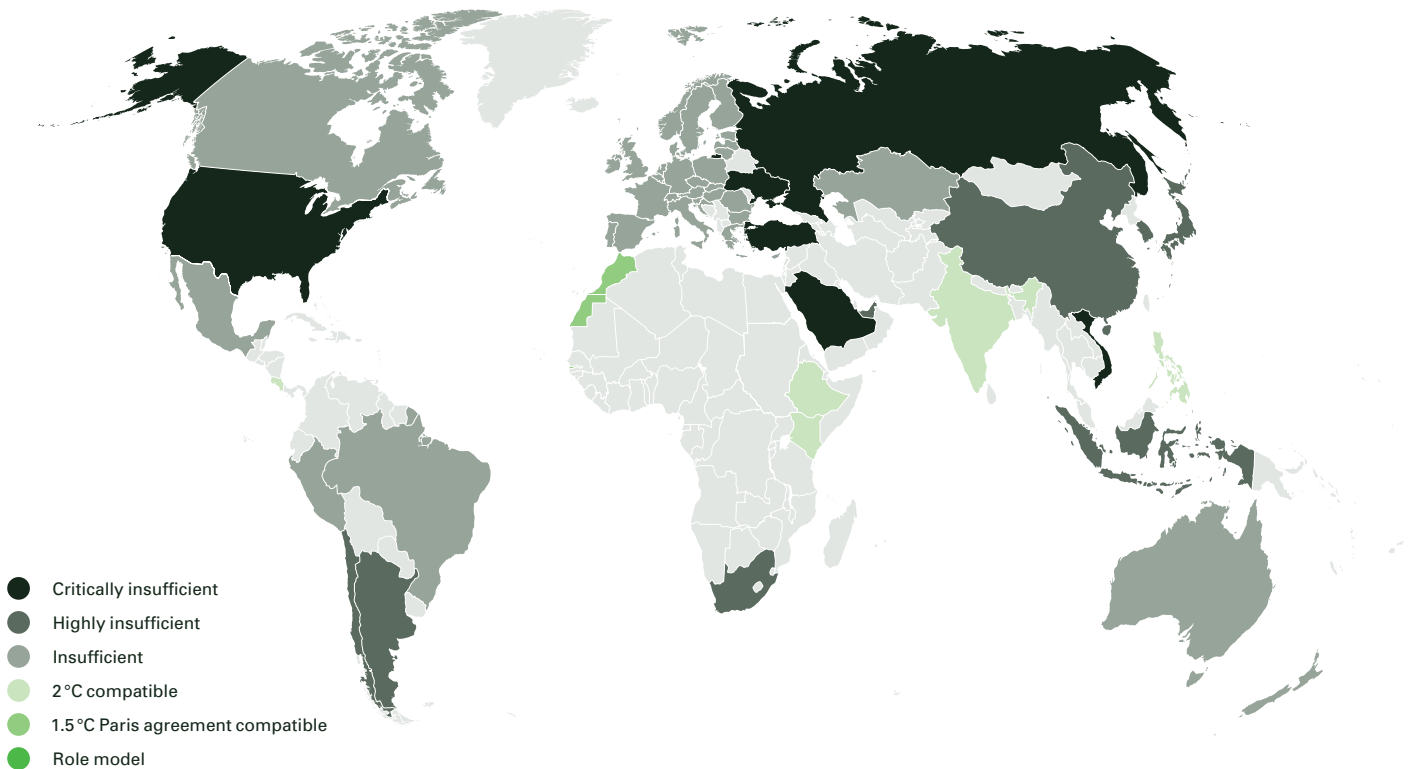
### AMBITIOUS CLIMATE TARGETS WORLDWIDE

The joint project with Germanwatch has the objective of determining on an annual basis the progress each partnership country has made in terms of its climate protection goals. Each of these countries will receive an overview showing how much it is affected by weather-related disasters. At least three countries will also receive detailed policy recommendations on how to improve their climate protection each year, fully in keeping with the foundation's slogan "From Knowledge to Action".

Our closer focus on national and international climate protection targets is important because the clock is ticking. It is true that the international community of states approved the Paris Agreement and agreed on climate protection rules. But in 2018 alone, as a result of strong economic growth, the G20 states' energy-related carbon emissions increased by 1.8%. The G20 countries are responsible for around 80% of global greenhouse gas emissions. Its member states have both a political responsibility and the economic means to steer carbon emissions onto a path that is compatible with the target of ensuring a maximum global warming of 1.5°C.

### IMPROVING CLIMATE PROTECTION

The climate protection goals of the countries are usually not ambitious enough. Even if all currently promised climate protection targets are implemented, we are heading for global warming of more than 3°C.



Source: climateactiontracker.org



# Water as a resource

## Tender for a new fog net project

15 February – 31 May 2019  
Funding amount: at least 150,000 euros for three years  
Project partner: WaterFoundation

## Fog net project CloudFisher in the Bolivian highlands

*Alto Veladero, Bolivia – Winner of the tender*  
Project start in September 2019  
Duration until 2021  
Construction of 14 new CloudFisher Midi collectors with a net area of around 350 square metres

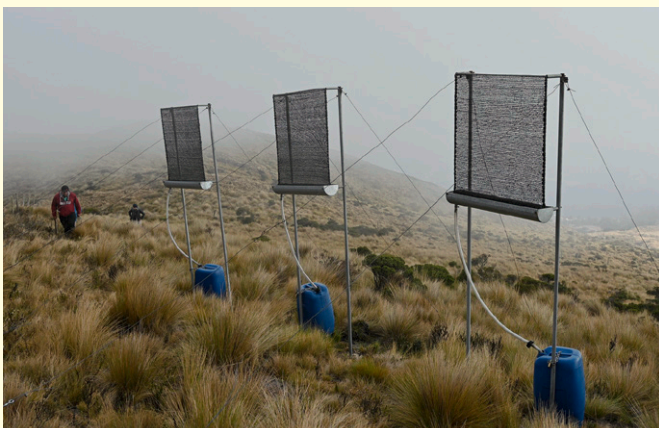
Project partners: WaterFoundation, Zabalketa, Instituto de Capacitación del Oriente (ICO), Oswald Foundation

## FogNet Alliance

Since August 2017  
Global partnership and network of researchers, water experts and international organisations on fog net technology  
Project initiators and founding members: WaterFoundation, Munich Re Foundation

“With the smaller CloudFisher Midi version we have good chances for a successful project in the Bolivian highlands and it is cheaper than the large CloudFisher Pro previously used in Morocco.”

PETER TRAUTWEIN  
Industrial designer and developer of fog collectors



### TEST COLLECTORS IN THE BOLIVIAN HIGHLANDS

Test collectors in the Valles Cruceños region (left picture). Photo right: Martina Mayerhofer (2nd from right), Munich Re Foundation, visited together with Teresa López de Armentia (centre), Zabalketa, and Peter Trautwein, WaterFoundation, the project area at the foot of the East Andean mountains in September 2019.





**AFTER THE SPORT IS BEFORE THE PROJECT**

The on-site team in Bolivia warmly welcomed the visitors from Munich after a sports lesson. The school's greenhouse and vegetable garden in the project area urgently need the water from the fog collectors.

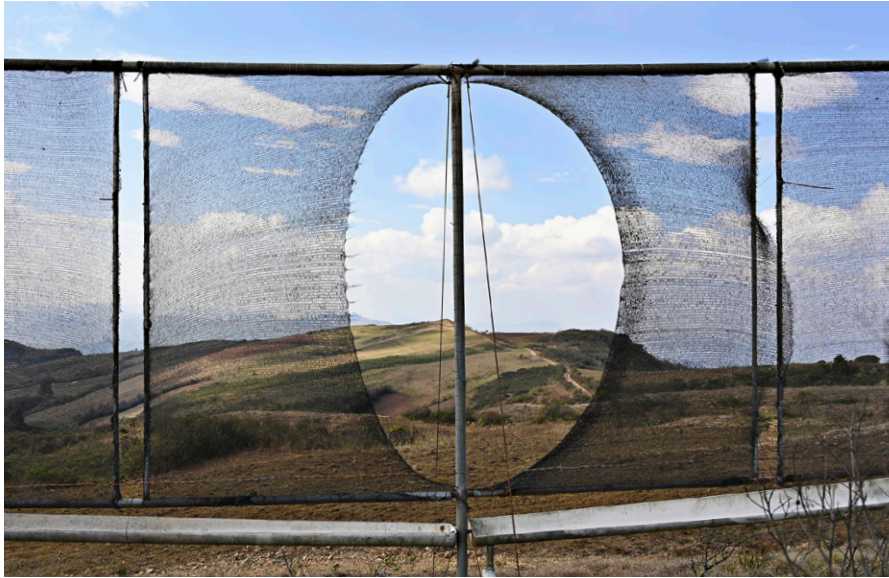
## FOG NETS FOR BOLIVIA

### Access to clean drinking water

To supply clean drinking water in arid regions – that is the objective of fog net projects, which Munich Re Foundation has been supporting for many years. Since the autumn of 2019, together with the WaterFoundation and the Oswald Foundation, we have been funding a new project in the Valles Cruceños region at the foot of the eastern Andes of Bolivia. The project was the winner of our joint competition.



## Water as a resource



### DIFFICULT CONDITIONS

First-generation fog nets usually cannot withstand the strong winds in mountainous regions. The newly developed collectors by industrial designer Peter Trautwein must be used in this region.

It was a difficult decision for our jury of experts. By the closing date of 31 May 2019, we had received a large number of exciting applications from many countries, including Chile, Kenya, Ecuador, Peru and Iran. The winner was the aid organisation Zabalketa based in northern Spain, which has already gained a lot of experience in the use of fog nets, including work with partners in Peru and Bolivia. Zabalketa has been working in development cooperation since 1991 and has set itself the goal of contributing towards sustainable and fair development. With its water projects, the non-governmental organisation looks to provide access to clean drinking water in poorer regions and promote the sustainable and efficient use of water as a resource.

### HUGE POTENTIAL FOR HARVESTING FOG

The project area lies in a mountainous region with scattered villages and winding roads – perched between 500 and 3,000 metres above sea level. In Alto Veladero there is virtually no rain from April to November. Rivers and wells dry out, and drinking water needs to be rationed and collected from remote mountain springs that are only accessible after long journeys on foot.

The water is often contaminated by cattle troughs or by agrochemicals in the soil.

The people in Veladero already have some experience in collecting water from fog. Together with its partner on the ground, the Instituto de Capacitación del Oriente (ICO), Zabalketa set up first-generation fog collectors in 2014/2015 at three locations: Veladero School, Veladero Central, and Veladero Saguintito. Unfortunately, the rather simple fog collectors at that time did not hold out for long against the powerful gusts of wind and the strong sunlight. But the experience gained showed that the area around Alto Veladero offers great potential for fog harvesting. Using small test collectors and weather stations, ICO staff conducted measurements in four other villages. The essential requirements for a good fog harvest are many days of fog, with high humidity and strong winds. The Sivingalito site proved to be the most productive in terms of fog harvesting (see map).

Using the total project funding of €228,000 over three years, the school in Alto Veladero and the people in the neighbouring village of Saguintito will be supplied with drinking water. A total of around 370 people are set to benefit from the new “CloudFisher” fog nets.

The project funds will also be used to install small fog collectors at five different locations in Valles Cruceños, with the aim of identifying other high-yield locations. The goal is to supply up to 160 additional families in future.

### MODERN CLOUDFISHER MIDI WILL BE USED

In the autumn of 2019, the German and Spanish project organisations met on site for the first time with representatives from the Bolivian non-governmental organisation, ICO. The objective was to inspect existing fog nets in the Alto Veladero region, and find the best locations for harvesting drinking water from fog. Once the locations have been decided on, the precise direction of the collectors to the mountain wind is often a crucial factor for the amount of water harvested.

In the Andes, wind speeds can reach 90 km/h. It quickly became clear that only the second-generation CloudFisher collectors would be suitable for use in the Alto Veladero region, as they are much stronger and more resistant to wind and sun. But the project team had many other issues to clarify: for example, what size of nets were appropriate in the region?

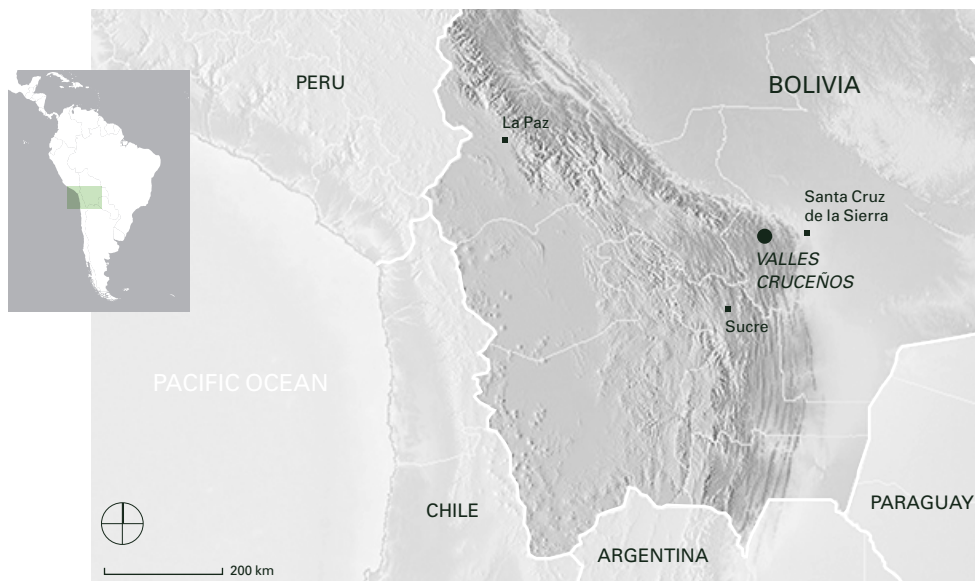
## Water as a resource

How can the large collector frames be anchored to the ground? How can all the building materials and construction equipment be transported to the collection sites – which are usually quite isolated and in very steep terrain?

After much thought, it was decided to deploy the CloudFisher Midi for the very first time. Developer Peter Trautwein, a member of WaterFoundation, says:

“With the smaller Midi version, we have a good chance of the project succeeding, and it’s cheaper than the large CloudFisher Pro.” The net on the mid-size version has a surface area of 24m<sup>2</sup> and the posts are firmly anchored with concrete foundations. Due to the very rocky substrate, it is not possible to anchor the nets with long ground spikes as originally planned.

In the autumn of 2019, the necessary materials to assemble 14 CloudFisher Midi units were packaged and sent off on the long journey from Germany to Bolivia. The materials included the netting, zinc-plated aluminium rods, collection troughs and much more. All being well, the assembly of the CloudFisher can begin in April 2020. After that, people in the region can look forward to enjoying fresh drinking water – harvested from fog



**PROJECT AREA VALLES CRUCEÑOS IN BOLIVIA**  
Even though the project area in the foothills of the eastern Andes is inland and far from the sea, there is still enough water-rich fog for the fog collectors.



**FogNet Alliance**



Water is a precious resource in many regions of the world. Harvesting drinking water from fog is an innovative technology that is attracting increasing interest worldwide. In arid mountain and coastal regions with high humidity, large collectors gather the moisture from fog to provide people with clean drinking water. We believe that information about fog nets needs to be spread around the world.

This is why the WaterFoundation and Munich Re Foundation have established an international platform – FogNet Alliance (FNA). FNA is a global partnership and network of researchers, water experts and international organisations. They all have a common goal: the promo-

tion and development of fog net technology as a valuable sustainable innovation. At the same time, the alliance is supporting other players who are launching new projects or wish to develop existing ones.

The FogNet Alliance is open to new members – we warmly invite all players and interested parties to participate.

*You can find further information on net technology, along with a reference list containing scientific articles, press reports and FAQs, on the FogNet Alliance website at [www.fognetalliance.org](http://www.fognetalliance.org).*



# Inclusive insurance

## 15th International Conference on Inclusive Insurance – Coping with Climate Risk

Dhaka, Bangladesh  
5–7 November 2019  
580 participants from 42 countries  
Project partner: Bangladesh Insurance Association (BIA), Microinsurance Network

*FIELD TRIP*  
*Visit to two hospitals of the state-run “Social Health Protection Scheme” (SKK)*

Dhaka, Bangladesh  
8 November 2019

Organiser: Green Delta Insurance Company

## 5th Eastern & Southern Africa Regional Microinsurance Conference – Learning Sessions Tanzania

Zanzibar, Tanzania  
13–15 August 2019  
175 experts and government representatives from 18 countries

Project partners: Microinsurance Technical Working Group of Tanzania, Financial Sector Deepening Trust (FSDT), Tanzania Insurance Regulatory Authority (TIRA), Association of Tanzania Insurers (ATI)

## Climate Risk Insurance Conference – Learning Sessions Mongolia

Ulaanbaatar, Mongolia  
17–18 September 2019  
70 participants from insurance companies and regulatory authorities

Project partners: Financial Regulatory Commission of Mongolia (FRC), National Emergency Management Agency of Mongolia (NEMA)

## World Map of Microinsurance

*“Landscape of Microinsurance in Africa 2018 – focus on selected countries”*

Project partner: Microinsurance Network

**“Insurance companies need to play a more effective role in keeping production and the economy out of risk.”**

Prime Minister of Bangladesh  
HER EXCELLENCY SHEIKH HASINA



### PRESS CONFERENCE OF THE 15TH ICII

On the podium: Katharine Pulvermacher, Director of the Microinsurance Network; seated from left to right, Rubina Hamid, Vice-President of BIA, Dirk Reinhard, Head of the Conference Steering Committee, and Astrid Zwick, Head of InsuResilience. The Prime Minister of Bangladesh, Sheikh Hasina, opened the conference (right picture).



**OPENING CEREMONY**

The conference was very busy. 580 insurance and development experts from 42 countries took part. There were also numerous film crews and representatives of the press.

# 15TH INTERNATIONAL CONFERENCE ON INCLUSIVE INSURANCE

## Climate risk cover in emerging markets

Bangladesh is one of the countries most seriously affected by climate change. Insurance is relatively uncommon, despite the country having almost 80 insurance companies and a strong financial sector. The chief focus of the 15th International Conference on Inclusive Insurance was on finding ways to overcome obstacles to better market development.



## Inclusive insurance

Bangladesh, the host of the 2019 15th International Conference on Inclusive Insurance, is a prime example of the threats posed by climate change. Extreme natural disasters, such as cyclones, floods and droughts, have the potential to destroy the livelihoods of the 160 million people living in the world's largest river delta. The seriousness of the threat is reflected in the World Risk Report 2017, where Bangladesh is ranked 5th of the 171 countries analysed.

Natural disasters also pose a growing threat in other parts of the world, especially for poorer social groups. According to the UN Food and Agriculture Organization (FAO), more than 2.5 billion people around the world are dependent on agriculture to earn a living, with most of them at the bottom end of the income pyramid. Insurance is an important instrument for handling the resulting risks and for improving resilience.

However, safeguards of this kind are not very common. This was one of the findings from a landscape study on climate and disaster insurance in 22 Asia-Pacific countries conducted by the InsuResilience Global Partnership, with assistance from the Regulatory Framework Promotion of Pro-poor Insurance Markets in Asia (GIZ RFPI). First results from the study were presented during the conference, and provided valuable input for the discussions.

It found that, while most countries have a framework plan for disaster risk management, there was a shortage of insurance solutions and methods of financial protection. For example, the current plans do not include index-based insurances or disaster protection products. In a disaster situation, these countries are consequently dependent on aid from foreign donor nations. However, the willingness to provide such international aid is declining.

### UNTAPPED POTENTIAL

In the countries studied, there are 25 instruments that are categorised as climate or disaster risk insurance, and which reach over 212 million people (8.5% of the region's population). Of these, 80% are systems at macro level.

There is large untapped potential in the field of mobile solutions for disaster protection products due to ongoing problems with sales and marketing. Government-subsidised (and compulsory) products and bundled solutions, on the other hand, are generally developing well.

The fact that over 90% of the population in the Asia-Pacific region has no insurance protection should be a wake-up call for governments and insurers. The experts agreed that insurance needs to be an integral component of disaster management. In this context, the ex-post financing approach to covering losses after disasters have occurred (for example from the national budget) should be reviewed. Instead, ex-ante planning and financing is required, making use of all the various financial and insurance instruments at micro, meso and macro level.

But, as the example of Bangladesh shows, there is still a long way to go: insurance penetration in the country is approximately 1% of GDP, one of the lowest rates in the world. On the other hand, the country has a strong micro-finance sector that reaches almost 40 million people according to the National Credit Development Forum. Bangladesh's microfinance institutes also offer risk protection in the form of credit life insurance. Despite the enormous potential of microinsurance, the market continues to be sluggish.

### COOPERATION BETWEEN INSURERS AND THE MICROFINANCE SECTOR IS KEY

Politicians are aware of the problem: "We need to integrate insurance companies more effectively to protect production and the economy against risks," said Bangladeshi Prime Minister, Sheikh Hasina. Ashadul Islam, who is responsible for financial institutions at the Ministry of Finance, believes it will be possible to increase insurance penetration to 35% of the population (over 50 million people) by 2025. But to achieve this, the insurance and microfinance sectors must work more closely together. Countries like the Philippines have demonstrated that microfinance institutes not only know their customers' needs but also have efficient sales channels.

It is the job of politicians to encourage the different regulatory authorities and ministries to cooperate more closely, thereby improving framework conditions. In addition, the different ministries that make decisions on climate change adaptation measures need to coordinate their work better. A comprehensive national strategy for financial inclusion could make a crucial contribution to the development of the market. This could create a framework for the development of jointly accepted targets, while including all participants and coordinating the different activities.

### RECOMMENDATIONS TO IMPROVE MARKET DEVELOPMENT

International cooperation and exchange of knowledge remain important conditions to drive forward the market for inclusive insurance. The President of the Bangladesh Insurance Association (BIA) has asked Munich Re Foundation and the other partners at the conference to produce recommendations for the next steps in developing the market. Munich Re Foundation has summarised these recommendations and networked the BIA with other organisations that have experience in developing national strategies for inclusive insurance. We will also be offering a platform in future to discuss the opportunities and barriers to developing inclusive insurance.

### ABOUT THE EVENT

*The 15th International Conference on Inclusive Insurance was held from 5 to 7 November 2019 in Dhaka, Bangladesh. It was organised by the Bangladesh Insurance Association (BIA), Munich Re Foundation and the Microinsurance Network. Around 580 insurance and development experts from 42 countries took part in the conference, which was being held for the fifth time in Asia. More than 80 speakers shared their knowledge at 30 different events.*

*The 16th International Conference on Inclusive Insurance will be held from 10 to 12 November 2020 in Kingston, Jamaica. The conference will be hosted by the Insurance Association of Jamaica (IAJ) and Munich Re Foundation, in collaboration with the Microinsurance Network.*

## LANDSCAPE OF MICROINSURANCE IN AFRICA

### Stable growth with setbacks

One of the highlights of this year's Conference on Inclusive Insurance was the presentation of the Landscape of Microinsurance in Africa 2018 study – focus on selected countries. The study illustrated once again the obstacles that are slowing market development. These include inadequate market data, the lack of regular evaluation, different definitions of microinsurance, and a lack of willingness to exchange data. As a result, millions of African households and small companies on low incomes remain uninsured, and therefore vulnerable to climate change, natural disasters, food insecurity, accidents, illnesses and premature death.

The key findings of the study:

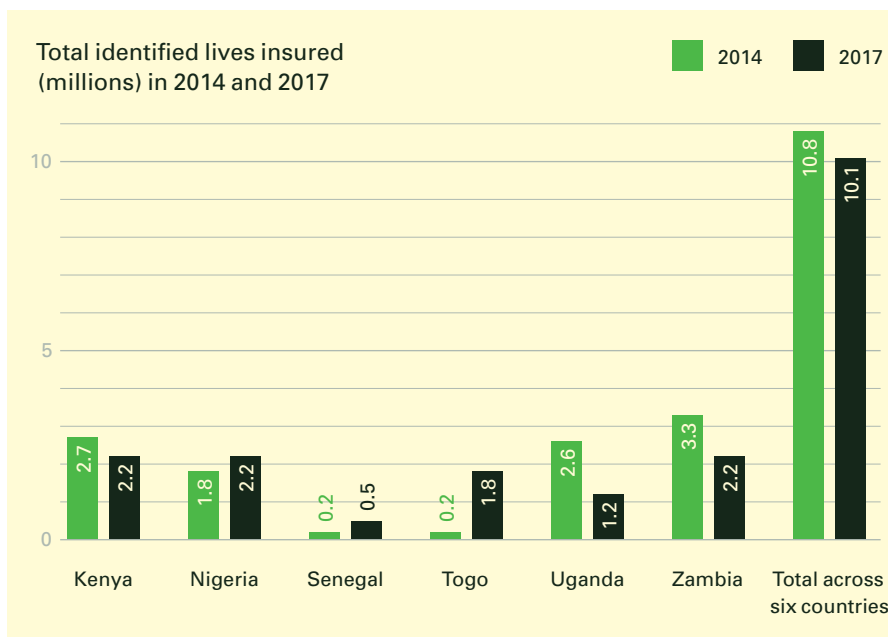
- There has been significant growth in simple health products, such as hospital cash covers.
- So-called “freemium” models, where mobile phone users automatically receive a slimmed-down basic insurance offer (free), but must pay for a full version (premium), proved unsustainable and led to a drop in the number of customers overall.
- Data collection is becoming an ever-greater challenge as the willingness to exchange information declines. Of 44 countries contacted for the study, it was only possible to obtain reliable data for six.

The study was co-financed by the Government of Luxembourg, Munich Re Foundation, the Center for the Economic Analysis of Risk (CEAR) at Georgia State University, and insurance company AXA.

*Further information:*

*Landscape of Microinsurance in Africa 2018 – focus on selected countries*  
<https://tinyurl.com/s22snrw>

*World Risk Report*  
<https://tinyurl.com/vca4tk4>



**“FREEMIUM” AND THE EFFECTS**  
 Although the number of insured in some of the countries studied increased between 2014 and 2017, numbers overall have actually fallen by 6.5% to 10.1 million. This is primarily because of the boom created by the popularity of the freemium model prior to 2014. The model proved unsustainable as people failed to convert free insurance into paid products, and most freemium products had largely disappeared by 2017. However, many other products showed constant growth overall.

“Millions of African households and small companies on low incomes remain uninsured.”



# HELPING THE POOREST OF THE POOR

## State-organised microinsurance in Bangladesh

The excursion at the 15th International Conference on Inclusive Insurance in Bangladesh took us to the north of the country. In the Tangail district, some 100 km north of Dhaka, we visited several pilot hospitals of a government health programme.



### NARGIS AND HER SONS

The 35-year-old mother from Ghatail is insured with her sons in a state system (SSK). The two-year-old Hossain suffered from food poisoning. He was immediately taken to hospital. After six days everything was fine again. "In the past, we lived in constant worry that someone gets sick," says Nargis. The SSK card gives the family security and ensures a good night's sleep.

## Inclusive insurance



### GOOD TALKS

Doug Rogers from the Microinsurance Centre at Milliman, USA, took part in the field trip. He talks to Rashida (29, centre) and Rahima (40, left) about the SSK programme (right picture). Where words fail, gestures help.

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**“Personnel bottlenecks and high costs present challenges that are found in so many health systems around the world.”**

Almost 50 million people live below the poverty line in Bangladesh. Falling sick here can prove very expensive. Every year, 15% of families have extremely high health costs and are often forced to resort to money lenders in order to finance treatment. As a result, close to 2.5% of Bangladeshis fall into poverty – every year.

### HEALTH PROVISION AS

#### A GOVERNMENT RESPONSIBILITY

The health system in Bangladesh is run by the government. This is laid down in Paragraph 15a of the constitution. And the serving Prime Minister, Sheikh Hasina, takes the matter very seriously. A programme called “Shasthyo Shuroksha Karmasuchi” – SSK – was launched on 24 March 2016. Its aim is to protect people living below the poverty line against health risks – throughout the country. In 2019, the government’s social health protection scheme already provided cover for some 300,000 people in 85,000 households. More than 45,000 sick people received medical care and around 10,000 patients were treated in hospitals.

The officials responsible for the SSK scheme have ambitious targets. It is hoped that the scheme will see roughly one third of the population in Bangladesh covered by 2032, and in due course the entire country.

### PUBLIC INSTITUTIONS KEEP COSTS DOWN

The programme is managed by Green Delta Insurance, a large state insurer, which uses digital solutions that allow it to streamline administration and customer management. But how can such a huge programme be financed? It is currently funded on the basis of roughly US\$ 12 per participant per year. That is why the programme is also regarded as microinsurance. Not every illness is covered, and serious cases such as cancer are excluded. Nevertheless, almost 80 common illnesses are now covered. The SSK hospitals are state managed, which helps keep costs within reasonable limits. But, of course, it also presents challenges. Generally speaking, there is a shortage of doctors and nurses.

In Bangladesh, these professionals, in particular, often prefer to work in the private sector, where they can expect to earn more. Personnel bottlenecks and high costs present challenges that are found in so many health systems around the world – even in many industrialised countries.

### AMBITIOUS PLANS

In one hospital, the Madhupur Upazila Health Complex, the excursion participants had an opportunity to take a closer look at the SSK system and talk to some of its beneficiaries. Everyone was impressed. The aim of rolling out the programme throughout the country is ambitious and difficult to implement. If SSK manages to become established nationally, it will prevent many tragedies and improve the fortunes of many people. At the same time, it will act to effectively combat poverty. If the nationwide rollout succeeds, it will prove that the right policies, government-organised assistance and microinsurance can really help the poorest of the poor.



# LEARNING SESSIONS TANZANIA

## Ambitious targets for the next decade

Slowly but surely, the Tanzanian insurance market is reaching the low-income segment. Following the establishment of a regulatory framework in 2013, the country developed a microinsurance strategy and set up a technical working group. Insurance penetration has doubled over the last ten years to 15%, or 4.3m people over the age of 16. Building on this success, Tanzania is now pursuing a number of ambitious goals. By means of an action plan for microinsurance, it hopes to reach half of the adult population by 2028.

### AGRICULTURAL SECTOR GIVEN HIGH PRIORITY

Agriculture plays a key economic role in developing countries. Climate change, and the accompanying changes in weather conditions, are likely to exacerbate the already difficult situation farmers face in such states. To protect or increase harvest yields, these countries need to mechanise farming methods and gain access to capital. But loans are only granted if there is adequate risk management in place, which also includes adaptation and prevention measures.

The problem is that agricultural insurance is virtually non-existent in Tanzania, constituting just 0.02% of all available products. The situation is probably similar in most of the countries in eastern and southern Africa. This produces a serious discrepancy: less than 3% of all bank loans in Africa go to the agricultural sector, despite the fact that it accounts for around 70% of employment and 40% of economic output.

At the Learning Sessions in early August on the Tanzanian archipelago Zanzibar, the experts agreed that the lack of understanding of how insurance works is the main reason for the low insurance penetration. Further obstacles include the lack of affordable products on offer and the high costs involved. The Tanzanian Insurance Regulatory Authority (TIRA) therefore wants to abolish regulatory barriers and design a more flexible framework. This should facilitate the development and testing of new products, stimulate market growth and improve customer protection. To ensure that the initiative is successful, TIRA is cooperating with other authorities. A technical working group (TWG) is coordinating the work of all stakeholder groups.

### THE NEXT STEPS

Keeping transaction costs low is the key to achieving the targets. Solutions that are embedded in mobile payment systems are one low-cost example. Different financial service providers can develop products together, in the process creating added value for the customer. In addition, the development of insurance solutions needs to be embedded in a wider strategy for financial inclusion and disaster management. The costs of sales and marketing remain a key challenge, but one that can be overcome through the use of appropriate technologies and a reduction in regulatory barriers. Experts called on the insurance industry to improve its customer focus. Customers have to understand what value insurance creates for them. At the same time, insurers must increase the level of customer trust in their services. Finally, patience and a long-term perspective are required to facilitate the breakthrough of microinsurance – both in Tanzania and elsewhere.



### WELCOME TO THE TOUR

Dirk Reinhard, Vice-Chairman of MRF and head of our inclusive insurance projects, welcomes Mohamed Ramia Abdiwawa, Minister of Finance of Tanzania. The regional conferences are well received.



### STRENGTHENING RESILIENCE

The symposium in Mongolia was well attended with around 70 participants. The agricultural sector is extremely important in the country, so it is all the more important to have good cover for climate risks.

# LEARNING SESSIONS MONGOLIA

## National disaster reduction programme promotes climate risk insurance

The insurance industry is assuming a key role in the 2017 Mongolian legislative framework for disaster risk reduction. Agricultural production, in particular livestock farming, accounts for around 10% of the country's GDP. Over recent years, a shortage of feed resulting from a large amount of winter snow, coupled with droughts in summer, has repeatedly decimated stock levels. Between 1999 and 2002, around 11 million animals perished, while between 2009 and 2010 Mongolia's GDP fell by 4.4% due to extreme weather events. Climate risks therefore play an important role in the country's efforts to become more resilient to economic shocks.

### MULTILEVEL INSURANCE SYSTEM

In 2006, Mongolia introduced index-based livestock insurance (IBLI), which covers around 338,000 herders, or roughly 20%. The system operates using two thresholds: the owners bear any herd losses of up to 6%. Insurance kicks in for losses between 6% and 30%, for which herders must pay premiums.

Losses greater than 30% are covered by reinsurance, for which the premiums are paid by the Mongolian government. Participation in the system is voluntary. Losses are calculated based on the impact on the different animal herds found in certain regions.

Despite substantial claims in 2009, the programme is still running and IBLI premium income has increased to almost 3.5 billion tugrik (approximately € 1.2m). One success factor has been the close cooperation between the government and the insurance industry. IBLI is not just an insurance system, but also comprises a law that clearly sets out the government's responsibilities. These include paying the reinsurance premiums and covering the cost for a livestock census every six months. This forms the basis for calculating herd losses and, in turn, for deciding whether insurance benefits should be paid.

### DATA QUALITY IS CRUCIAL

The example shows that government participation can produce a sustainable insurance system. The government additionally acts as a provider of data, such as weather and insurance info. Data quality has improved enormously thanks to the rapid development of technology and the increasing number of data sources – satellites, weather stations, sensors and mobile phones. Mobile phones also play a central role in implementing efficient sales models, such as mobile payment systems.

The example of Mongolia shows what a positive impact insurance can have on disaster prevention efforts. Cooperation between the public authorities and the insurance industry, for example in the form of public-private partnerships (PPPs), should be examined on a case-by-case basis. To be successful, countries need to develop a national strategy for financial inclusion, clearly define the targets.





**DROUGHT AND FLOODS**  
Climate change has intensified the risks in many Asian countries. Both droughts and floods are increasing.

# Climate change and livelihoods

An essay by John Rowan

The Oxford Dictionary selected “climate emergency” as its word of the year for 2019, defining it as a “situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible damage resulting from it”. Such recognition reflects the striking rise of climate consciousness around the world and a sense of accelerating turbulence.





#### FLOODED VILLAGE

A woman in Bangladesh sits on a raised bamboo platform to protect her belongings from the water. The monsoon causes repeated flooding here. What is new, however, is the intensity and frequency of the extreme events.



## “Building greater resilience is vital.”

Across 2019 Christian Aid reported 15 climate-related disasters, inclusive of floods, droughts, tropical storms and wildfires, each costing over US\$1 billion in damages, and seven costing more than US\$10 billion each.

**A NEW HEAT RECORD EVERY DECADE**  
According to the World Meteorological Organization, the ten-year period (2010–2019) was the warmest decade on Earth since records began. The annual temperature in 2019 was 1.1°C higher than the global average for 1850–1900, which is used to represent pre-industrial conditions. Since the 1980s, each decade has been warmer than the previous one and ocean heat content has also reached record levels. These trends are expected to continue because of record levels of heat-trapping greenhouse gases in the atmosphere.

In 2019 a joint call from three UN agencies, World Food Programme (WFP), Children’s Fund (UNICEF) and Food and Agriculture Organization (FAO), reported that more than 11 million people in southern Africa were experiencing crisis or emergency levels of food insecurity. The severity of the situation arises from extended drought compounded by successive tropical cyclones Idai and Kenneth, which displaced more than two

million people between March and April and left 1.2 million children in Comoros, Mozambique, Zimbabwe and Malawi needing aid. This example illustrates how more frequent and intense events, and in this case back-to-back crop failures, means communities have insufficient time to recover before another amplifying shock sets in.

### CLIMATE EMERGENCY – AN EXISTENTIAL THREAT

The current levels of carbon dioxide emissions are predicted to drive global temperature rises of 3–5°C by the end of this century. Such rises would be catastrophic according to leading climate scientists in the UN Intergovernmental Panel on Climate Change (IPCC), who warn that any increases above 1.5°C will significantly worsen the risks of drought, floods, extreme heat and poverty for hundreds of millions of people – as well as impact on underpinning ecosystems through processes such as soil erosion, biodiversity loss and ocean acidification. The term climate emergency is thus recognition of the profound and indeed existential nature of this challenge. Urgent and unprecedented changes are needed in land use, energy systems and transport to keep global temperature increases below 2°C and ideally below 1.5°C as enshrined in the 2015 Paris Agreement.



JOHN ROWAN

The author of the essay is Professor of Physical Geography at the University of Dundee, UK.

Of course, temperature is only part of the issue because recent decades have witnessed unprecedented changes in terms of glacier and polar ice melt, desertification, increasing sea level and ocean acidification. A temperature rise of 2°C would mean nearly two billion more people experience severe heatwaves at least once every five years. On current pathways it is estimated that by 2050 one in seven of Bangladesh's population, up to 18 million people, may be displaced because of poverty due to rising sea level, more frequent coastal flooding and consequent salinisation of soils.

### MORE INTERNATIONAL COOPERATION NEEDED

Looking ahead, what responses are available for regions and countries especially at risk? For many, the answer begins with international cooperation. All countries should seek, without further delay, to implement the 2015 Paris Agreement. Working together is vital to achieving further emission reduction pledges over time and keep global temperatures within 1.5°C of pre-industrial levels. Operationalising the UNFCCC's "loss and damage" concept is another global approach addressing challenges "beyond adaptive limits", and in time may provide an instrument of financial restitution. All stakeholders, including presently disenfranchised communities, should be involved in these negotiations.

Meanwhile, building greater resilience is vital in the immediate and medium term. In this regard much attention is given to the role of ecosystem-based adaptation seeking to promote the merits of working with rather than against nature. By definition these are place-based, often building on indigenous knowledges that are culturally attuned to the development aspirations of local people and their environmental settings. Greater agency may also be achieved through emerging markets where micro-finance and microinsurance programmes, often serviced through new generation mobile technology, are helping millions of low-income individuals in Africa and Asia set up business and protect livelihoods impacted by climate change. Improving health and educational outcomes also build social capital vital to creating more equitable and sustainable futures consistent with the aspirations of the UN Sustainable Development Goals.



# Disaster prevention and resilience

## 2019 RISK Award Coastal Resilience

*Presentation of the RISK Award project ideas at the Global Platform for DRR*

Geneva, Switzerland  
17 May 2019

Project partners: UNDRR, GRF Davos

## Resilient floating homes in Bangladesh

*Project launch of the 2019 RISK Award winner*

Dhaka, Bangladesh  
1 July 2019

Project partners: University of Dundee, Resilience Solution Bangladesh

## 2017 RISK Award EpiNurse in Nepal

*Foundation funding ends: Transfer of project responsibility to local partners*

30 August 2019

Project partner: Nursing Association of Nepal (NAN)

## Concept and design workshop on floating homes in Dhaka

*Development of efficient and social "Floating Home" solutions*

Dhaka, Bangladesh  
4 November 2019

40 participants from universities and NGOs

Project partners: University of Dundee, Resilience Solution Bangladesh

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**"Floating homes combine  
disaster prevention  
and livelihood opportunities  
under one roof."**

NANDAN MUKHERJEE

Researcher at the University of Dundee and co-developer  
of the Floating Homes Concept in Bangladesh



### MORE THAN A TROPHY

The RISK Award is more than a beautifully made trophy (left). The winning projects are usually fully implemented. Right: A prototype of a floating home that was built and tested south of Dhaka.



**MONSOON FLOODS**

Sea level rise: the annual monsoon rains threaten many inhabitants of Bangladesh. Flooding is part of the annual rhythm of life, but climate change is making events more extreme.

## GLOBAL PLATFORM FOR DISASTER RISK REDUCTION More than financial support

Helping societies become more resilient to disasters is a key objective for Munich Re Foundation. One way to do this is through the RISK Award, which we present every two years in conjunction with the United Nations Office for Disaster Risk Reduction (UNDRR) and the Global Risk Forum Davos. The award is intended to improve risk management and resilience, particularly in the world's most impoverished regions. We see ourselves not just as funders, but also as topic partners and advisers who share our strong network of contacts.





### LEARNING FROM HONEYCOMBS

A model sketch for the floating homes project is based on the hexagonal shape of honeycombs. The compact shape reinforces the protection against strong wind pressure from storms.

## 2019 RISK AWARD Floating homes for Bangladesh

Greater resilience for coastal regions is the slogan for the 2019 RISK Award. The award worth € 100,000 went to Dundee University in Scotland and its implementation partner, Resilience Solution from Bangladesh. With their resilient floating homes concept, they hope to offer people greater protection against the regular occurrence of flooding.

Bangladesh is particularly affected by climate change in the form of floods, erosion, cyclones and rising sea levels. More than 35 million people live along its coastline, some of which is just a few centimetres above sea level. According to studies by the University of Dundee, about 30% of the land area of Bangladesh is threatened by climate change.

One possible solution is resilient floating houses. They can withstand cyclones, are made from renewable materials, and can operate independently in emergencies with solar and wind power generators.

And the beauty of floating homes is that they also create new livelihood options, such as vertical farming (planting crops in vertically stacked layers) and aquaponics (fish farming with aquaculture and the cultivation of crop plants using hydroculture). There is even room to keep chicken. But what sounds like the perfect solution for Bangladesh turns out to be a rather complex undertaking.

### A RANGE OF SOLUTIONS

At the start of the project, five communities in Bangladesh were assessed and the most promising one was selected at the beginning of 2020. Before that, the most suitable form of house had to be decided on. Houses for single families from previous pilot projects had not always proved to be the best solution. They interfered too much with the complex social system, resulting in feelings of marginalisation, envy and resentment.

A floating school, on the other hand, could solve many of the social problems and create a win-win situation. Schoolchildren learn how to deal with climate change, how to make a living from alternative farming methods, and how to use renewable energy sources. The school can become partially self-financing through the income it generates.

A further objective of the project is to make the concept of floating homes more popular, and highlight to local people how they could continue to live on the coast of Bangladesh. This change can only be achieved if people really believe in it. But changes in social behaviour generally take a long time. In many locations, it has now become a race against time as disasters and climate change accelerate the need to adapt.

# 2017 RISK AWARD

## EpiNurse enters the home straight

We have supported the EpiNurse project in Nepal for two years after it won the 2017 RISK Award. The aim of the project is to improve local health-care and the health system through the use of modern information and communication technologies. Two representatives from the Nursing Association of Nepal talk about the progress made.

*Sushila and Apsara, you have been involved with the EpiNurse project for two years. What has the project achieved?*

SUSHILA: EpiNurse has attracted a lot of attention in Kathmandu and many rural areas. In Kathmandu alone, more than 200 EpiNurses have been trained to work with the digital systems. They are helping to create a more efficient health system for thousands of people. The ShineOs software we use has been updated and adapted to local needs.

*What are the next steps planned?*

APSARA: Following the pilot phase that was supported by the RISK Award, we now want to secure the long-term success of the project. One key step is cooperation with the Ministry of Health to allow us to access government subsidies. That would make us less reliant on external funding.

SUSHILA: We would also like to strategically expand our cooperation with schools and universities, which has been on a selective basis up to now. If EpiNurse subjects became part of the general training syllabus for nurses, the programme could reach much bigger sections of the population. APSARA: We are already working with the Kathmandu City Authorities on this subject, and are in talks with the Ministry of Health. One challenge is to integrate the regional health centres, which are relatively independent, into the EpiNurse programme – for example those in the area around Kathmandu. The health centres in the mountainous regions along the Langtang and Ganesh ranges are often quite remote.

*Leaving aside the financial aspects, has the Risk Award had any other positive impact on the project?*

APSARA: Yes, definitely. The presentation of the RISK Award on the Global Platform for Disaster Risk Reduction completely changed how we were seen both at home and abroad. For example, the World Health Organization (WHO) involved us at an early stage in its plans to declare 2020 the “Year of the Nurse and the Midwife”.

Also, other countries, including Indonesia, the Congo and the Philippines, are showing an interest in our approach.

*What have been the most important guarantees of success for the project up to now?*

SUSHILA: The most important thing was that the project ownership was in the hands of the EpiNurses themselves from the very start. In an emergency, we nurses are in a better position to assess the local situation and decide what treatment is needed and what medicines we are short of. We then made the leap into the digital world with help from Sakiko Kanbara, who founded EpiNurse in Japan. APSARA: What should not be underestimated, particularly here in Nepal, is the influence of the RISK Award in empowering women and increasing their self-confidence. We are often the people who carry the responsibility, in the field of healthcare for example, yet in many cases we are not seen as important decision-makers. Thanks to EpiNurse, the general public now pays more heed to us nurses.

*Thank you very much for the discussion, and may we wish you every success for the future of EpiNurse.*



### STRONG WOMEN

Apsara Pandey (left) is project manager and Vice-President of the Nurses Association of Nepal (NAN). Sushila Pandel (right) is an active EpiNurse and project collaborator. Both ensure the success of the project.



# Successful asset management and climate protection can be compatible

Foundations – other than spend-down foundations – are generally set up to exist in perpetuity. It is therefore clear that they also need to address global developments and their impact on future generations. The addition of sustainability and climate protection to the Principles of Good Practice for Foundations<sup>1</sup>, published by the Association of German Foundations, was therefore long overdue.



DIRK REINHARD

The author of the essay is Vice-Chairman of the Munich Re Foundation and Chief Financial Officer. Sustainable investment is particularly close to his heart.

The Association only added these important elements to the above-mentioned principles in 2019. They now finally read: “Foundations should act in a sustainable manner, mindful of their responsibility towards future generations. Insofar as their means allow, foundations shall promote the preservation of the natural bases of life, particularly with regard to curbing the climate crisis and preserving biodiversity, in accordance with the UN’s 2030 Agenda for Sustainable Development and the Paris Agreement.” In many cases, foundations have promoted projects related to environmental and climate protection, and they are making efforts to ensure their foundation activities are as environmentally friendly as possible. Unfortunately, however, the importance of sustainable management of foundation assets, both for the success of foundation work and in relation to environmental and climate protection, is frequently overlooked.

## MINIMISING RISKS AND USING OPPORTUNITIES

The legal framework conditions require foundation assets to be invested *securely and profitably*. *Long-term* capital preservation takes precedence over a short-term increase in revenue. The *rule of asset preservation* and the obligation to pursue at all times the foundation goals must remain the central objectives of asset management. Particularly because of their long-term focus, foundations must supplement traditional targets such as profitability, liquidity and security with ecological, social and ethical investment criteria, and ensure the “sustainable management” of their assets. The trends in the share prices of certain utilities and car makers illustrate how climate change and shifting framework conditions are transforming industries and influencing stock market values.

<sup>1</sup> <https://tinyurl.com/rponhdd>

## Sustainable investment

At the end of 2019, for example, the share prices of leading German utilities E.ON and RWE were still between 70% and 80% below their all-time highs. At the start of January 2020, the business newspaper Handelsblatt reported that electric car maker Tesla is now worth more than US giants Ford and General Motors combined. It is, of course, questionable whether this will remain the case. Car manufacturers are currently experiencing dynamic changes that the bulk of energy suppliers now have behind them, and they have adjusted their focus accordingly. But the example shows the opportunities and risks that are accompanying the profound changes in the economy in the context of climate change and climate protection.

### FROM "BEST-IN-CLASS" TO AN INTEGRATED APPROACH

Since it began operations in April 2005, Munich Re Foundation has taken sustainability criteria into account for the management of its assets. Initially, it used a best-in-class approach in combination with negative criteria. This involved investing exclusively in companies that scored best within their industry in an independent ESG (*environment, social and governance*) analysis. This has now developed into an ESG-integration approach, featuring certain exclusion criteria, that combines financial indicators with an ESG analysis. Purchase bans for investments in specific activities (e.g. armaments) also apply for Munich Re Foundation assets, along with revenue limits for activities in the coal industry.

According to an analysis of different approaches to sustainable investment that was published by US bank JP Morgan<sup>2</sup> at the end of 2019, the "integration" concept in Europe delivers the best returns and the highest "Sharpe ratio".

The latter measures which investments achieve the highest return in relation to share price fluctuations. According to JP Morgan, the exclusion criteria produced the best returns of all approaches over the last 12 months. This assessment validates Munich Re Foundation's investment strategy.

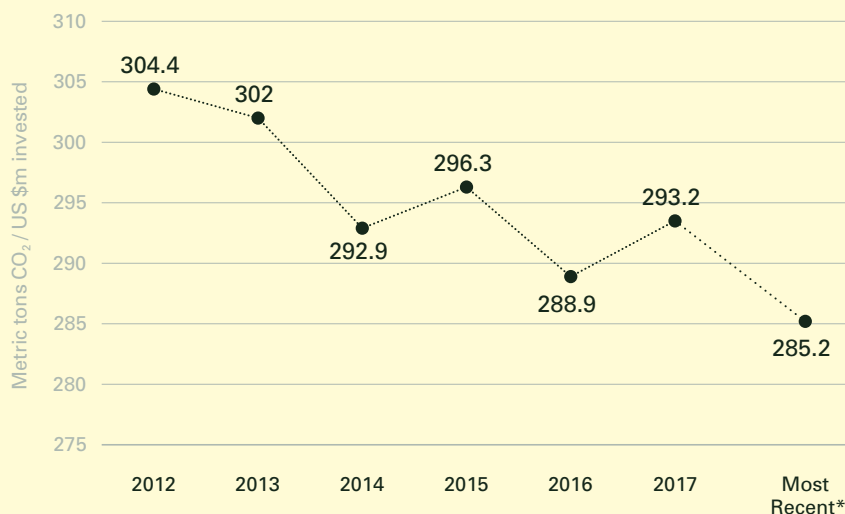
### COMPLIANCE WITH THE PARIS AGREEMENT AS AN INVESTMENT TARGET

The integrated portfolio analysis for our foundation assets is based on data and indexes from the internationally respected US financial services provider MSCI. These also allow us to track the carbon emissions from the investments.

According to the available statistics (see graph), carbon emissions of our investment portfolio are falling. Can we expect them to continue to fall fast enough in the future? No, we can't. Emissions are still falling too slowly if they are to meet the Paris targets. A persistent problem is the inadequate data situation. The statistics available cover only roughly half of the foundation's portfolio, and are largely shares and corporate bonds. Recording of government bonds is unclear, since the emissions for a country already include company emissions. It would be desirable to have comprehensible statistics across the entire investment portfolio in order to define a long-term target.

Munich Re Foundation will continue to investigate closely the subject of climate protection and investment. Improving the data situation will play a key role in this context. We will also take an active part in the dialogue between different foundations. In the long term, all major foundations should pursue clear climate protection targets – for investment as well – and each should contribute to maintaining the basis for our existence. Assets need to be managed sustainably. After all, there is only one Earth.

<sup>2</sup> Handelsblatt, 16 December 2019



\*Reflects most recently available data for each company on the date of the report.

**DECREASING CARBON EMISSIONS OF INVESTMENTS**  
Munich Re Foundation's emissions have slowly decreased in recent years. However, not all data are available. The figures available cover 53.8% of the foundation's portfolio.

Source: MSCI/MEAG, 01/2020



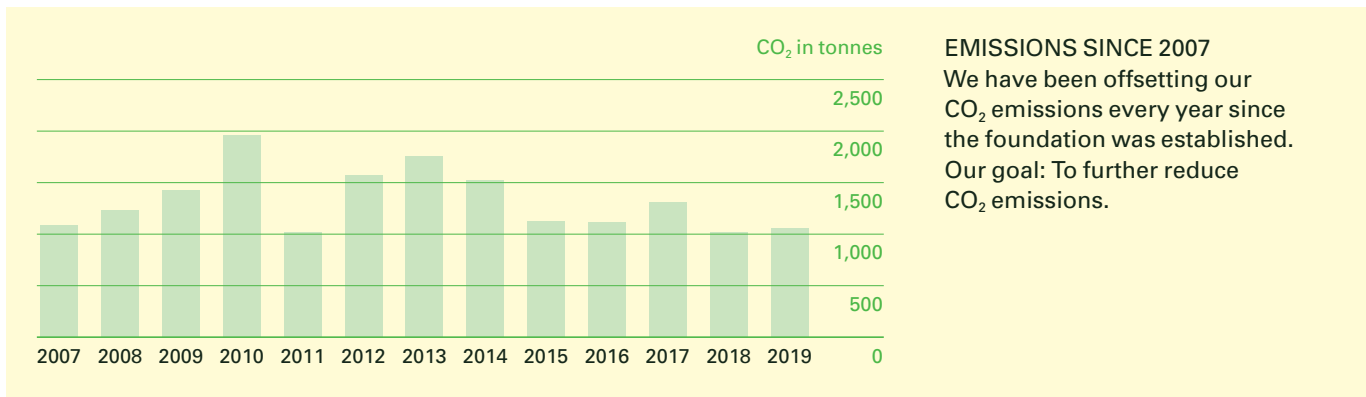
## Environmental performance 2019

The Munich Re Foundation takes responsibility for climate protection. Every year, we compensate our business-related CO<sub>2</sub> emissions and those of our guests (e.g. conference participants) through an offset project. In 2019, our carbon footprint amounted to 1,056 tonnes. The majority of 1,000 tonnes resulted from our projects, conferences and seminars, the rest from business trips and the operation of the office. Compared to the pre-

vious year, total emissions in 2019 increased by approximately 44 tonnes, but still remained lower than in the years 2007 to 2017. There are several reasons for the slight increase: The 2019 Summer Academy did not take place in Germany, as in 2018, but in Ghana, causing higher emissions from air travel. We were also pleased to welcome 580 participants to this year's International Conference on Inclusive Insurance in Bangladesh – about 100

more than in the previous year, which in turn led to slightly higher emissions. For business trips in Germany, the foundation's employees used the train almost exclusively.

*For further information please visit [munichre-foundation.org/home/About-us/Environmental](https://munichre-foundation.org/home/About-us/Environmental)*



**EMISSIONS SINCE 2007**  
We have been offsetting our CO<sub>2</sub> emissions every year since the foundation was established. Our goal: To further reduce CO<sub>2</sub> emissions.

### THE OFFSET PROJECT

#### Clean energy from hydropower in India

Our founder, Munich Re, offsets the emissions from our offices and staff travel. To offset the carbon footprint of our events, we buy CO<sub>2</sub> certificates from certified climate protection projects. In 2019, we supported the Kinnaur hydropower plant in India. As a run-of-river power plant, the project uses the natural watercourse of the river – there is no reservoir in which the water is temporarily stored.

It therefore does not cause the negative environmental impact often associated with larger dam projects. The power plant's electricity is being fed into the North Indian transmission grid, replacing conventionally generated electricity, mainly from coal-fired power plants. This makes it an alternative to emission-intensive fossil fuels. The total annual reduction in emissions amounts to 3,540,000 tonnes of CO<sub>2</sub> equivalents.

In addition, the hydropower plant contributes to the reduction of air pollution. This is a major problem in India: 11 of the 20 most polluted cities in the world are located there. Thus, the project actively contributes to the health of the population as well as to climate protection by reducing emissions.



#### HYDROPOWER IN INDIA

The run-of-river power plant in northern India uses the natural watercourse of the river for clean energy production without emissions.

## Internal foundation issues – Global partners

### Microinsurance

Microinsurance Network

Bangladesh Insurance Association (BIA)

German Society for International Cooperation (GIZ)

Mutual Exchange Forum on Inclusive Insurance (MEFIN) Network

Federal Ministry for Economic Cooperation and Development (BMZ)

International Labour Organization (ILO)/ Impact Insurance Facility

Georgia State University's Center for the Economic Analysis of Risk (CEAR)

Centre for Financial Regulation and Inclusion (Cenfri)

Munich Climate Insurance Initiative (MCII)

Access to Insurance Initiative (A2ii)

World Bank Group

Microinsurance Center at Milliman GmbH

Microinsurance Master

Financial Sector Deepening Africa (FSDA)

Fin Probity Solutions

InsuResilience

Technical Working Group of Tanzania

Association of Tanzania Insurers (ATI)

Financial Sector Deepening Trust (FSDT)

Tanzania Insurance Regulatory Authority (TIRA)

Financial Regulatory Commission of Mongolia

National Emergency Management Agency (NEMA)

### Fog nets

WaterFoundation

Zabalketa

Instituto de Capacitación del Oriente (ICO)

Oswald Foundation

### Energy School

Green City e.V.

RISK Award

Global Risk Forum (GRF)

UN Office for Disaster Risk Reduction (UNDRR)

Nursing Association of Nepal (NAN)

Dundee University

Resilience Solution Bangladesh

Summer Academy: World risk and adaptation futures

United Nations University, Institute for Environment and Human Security (UNU-EHS)

United Nations University, Institute for Natural Resources in Africa (UNU-INRA)

Ludwig-Maximilian-University of Munich (LMU)

United Nations Framework Convention on Climate Change (UNFCCC)

Climate change and sustainability

Germanwatch

University of Applied Sciences Munich

Eberswalde University for Sustainable Development (HNEE)

Ludwig-Maximilian-University of Munich (LMU)

Bonn-Rhine-Sieg University of Applied Sciences

University of Erlangen

Humboldt-Universität zu Berlin

United Nations University (UNU)

### Dialogue Forum

Deutsche Energie-Agentur (dena)

Network Klimaherbst Munich e.V.

Mercator Research Institute on Global Commons and Climate Change (MCC)

Strascheg Center for Entrepreneurship

Social Entrepreneurship Academy





Own Publications

2018 Report  
*German and English*



Report – 14th International  
Microinsurance Conference  
2018: Inclusive Insurance for  
Emerging Markets  
*English*



2019 RISK Award  
First-hand news –  
Best project proposals 2019  
*English*



Positionen 2019  
dialogue forums:  
Poor rich world  
*German*

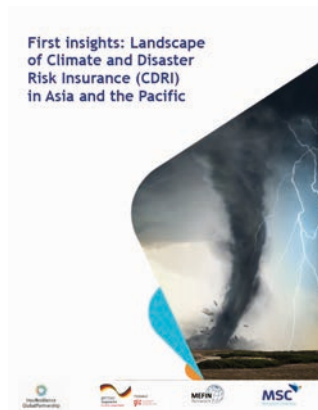


Publications with partners  
and from projects

Landscape of Microinsurance  
in Africa 2018 –  
focus on selected countries  
*English*



First insights: Landscape of  
Climate and Disaster Risk  
Insurance (CDRI) in Asia and  
the Pacific  
*English*



Gibika Film-Publikation –  
Muzaffar's life story: the  
complex linkages between  
climate change and conflict  
*English*

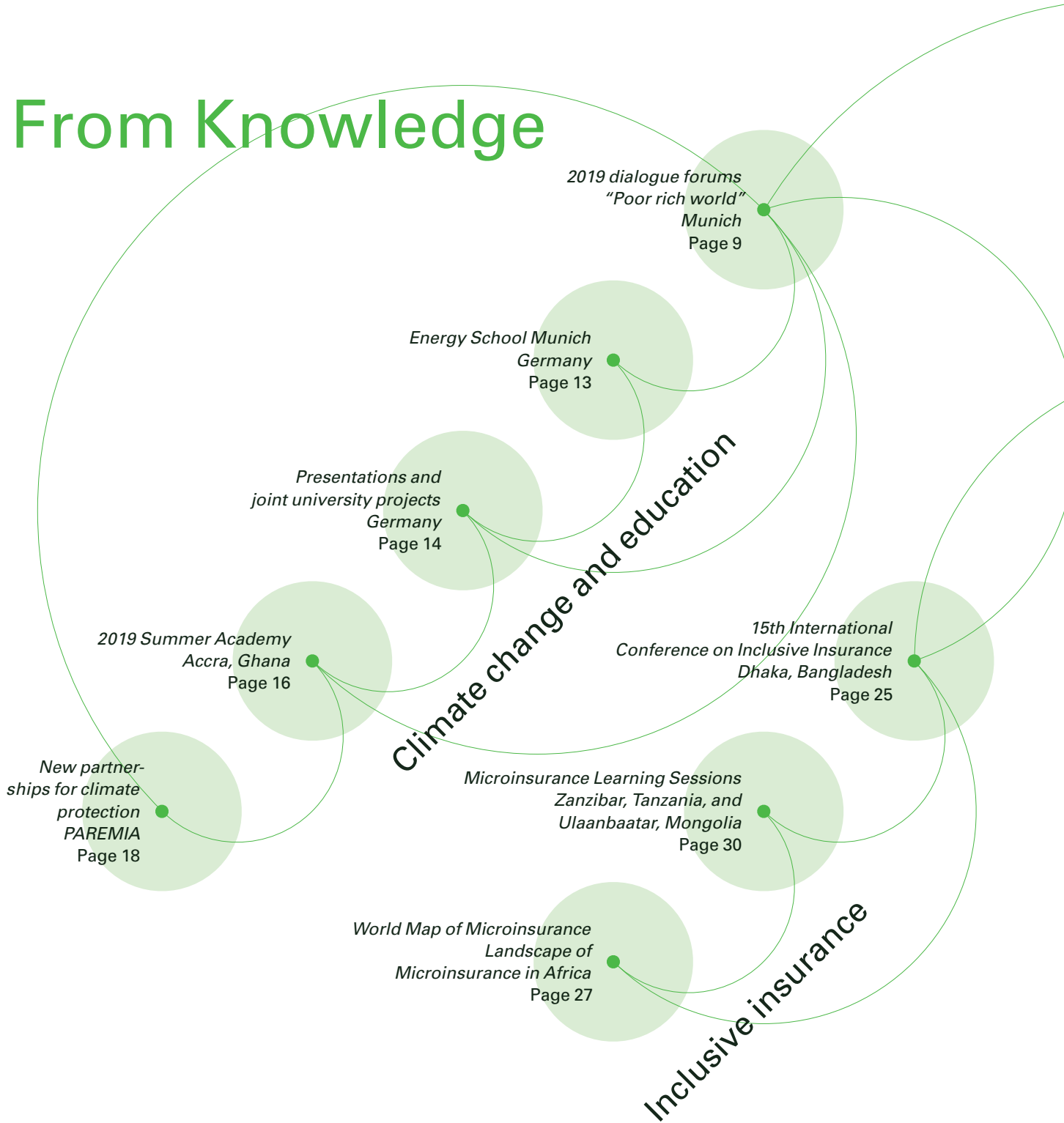


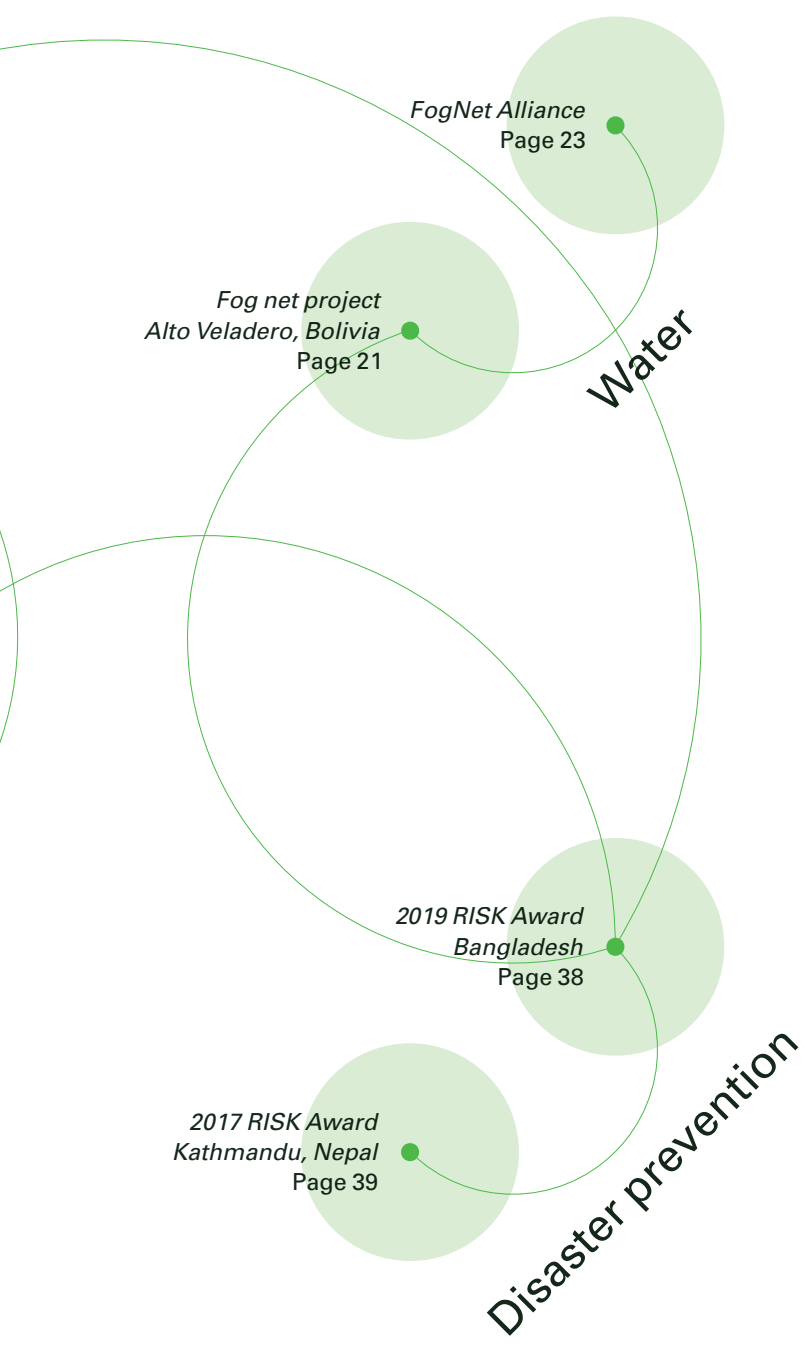
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