



The project **Advancing Climate Risk Insurance Plus (ACRIplus)** is part of the overall programme **Promoting Integrated Climate Risk Management and Transfer (ICRM)** funded through the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB). ACRIplus is implemented by GIZ and the Munich Climate Insurance Initiative e. V. (MCII).

# Applying Integrated Climate Risk Management (ICRM) on Renewable Energy in Barbados

Workshop

24-10-2017

09:00 – 16:00

Marriott Courtyard Hotel, Bridgetown, Barbados

# Aim of today's workshop

- Invite you to discuss and lead us
- Engage into an open discussion on a case for an ICRM on Renewable Energy Sector for Barbados
  - Build a general understanding for the international paradigm shift from Disaster Risk Reduction to an Integrated Disaster Risk Management.
  - Enrich the findings of our scoping mission
- Identify information gaps to be filled for a comprehensive roadmap
- Raise your interest to be back for the next workshop

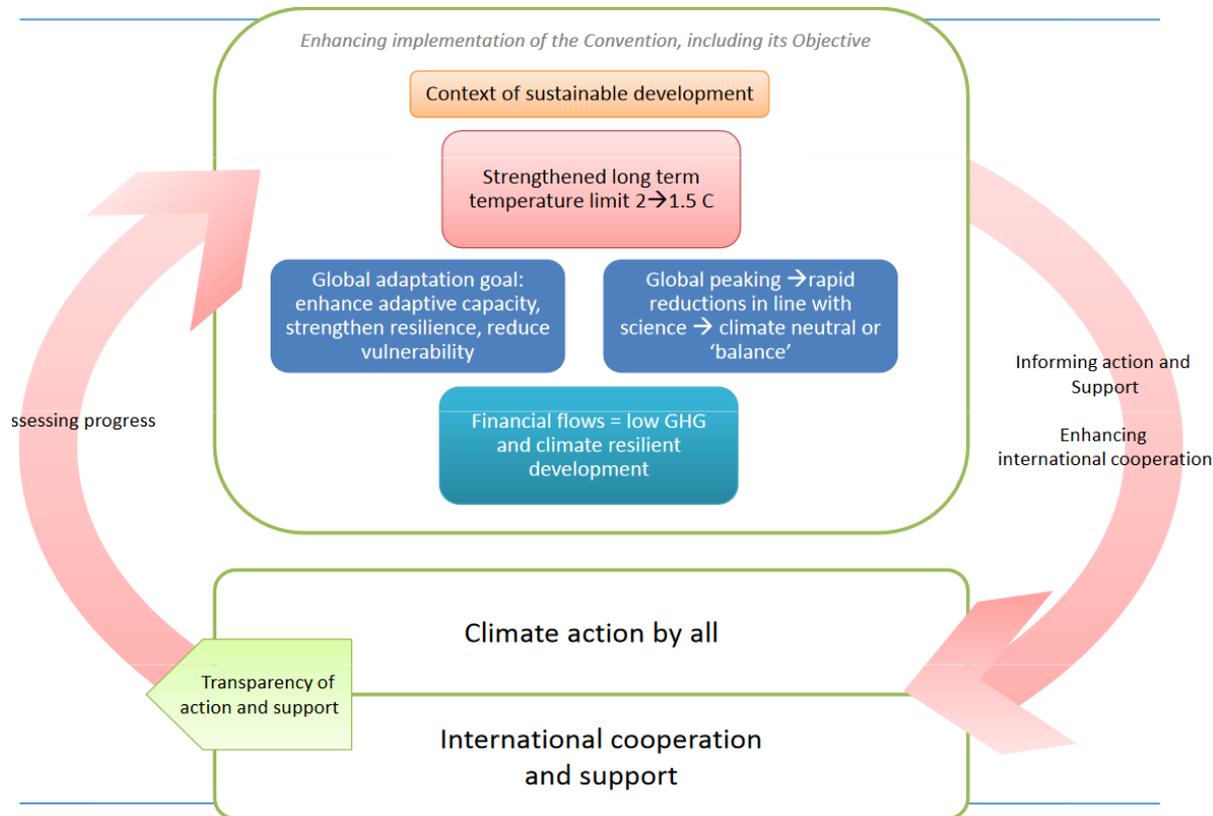
# Today's agenda

- Introduction and expectations of the workshop
- Introducing MCII & GIZ and the ACRI+ project
- Presentation of scoping research on Integrated Climate Risk Management (ICRM) by Nicholas Grainger
- Working Session:
  - ICRM Stakeholder Mapping
  - SWOT Analysis
  - Defining next research
- Closing Session

# Munich Climate Insurance Initiative e.V.

- **Role:** Implementing Partner within the ACRI+ Project
- **Social mission:** Initiated by insurers, academia and NGOs in 2005 to promote insurance role in climate change adaptation and complement risk management especially for vulnerable people
- **Our approach:** Pioneers concepts, tests risk transfer tools and implementation models through its expert network to advocate new ways of insurance
- **Networks:** Works closely with private sector insurers, governments and regulators, scholars & practitioners, and decision makers
- **Where:** Hosted at United Nations University – Institute for Human and Environment Security in Bonn

# After Paris – transforming societies to climate neutrality & climate resilience



- Countries to achieve carbon neutrality by 2050
- Full decarbonization of electricity sector
- Engage in national adaptation planning and undergo strategic climate risk management strategies

# Why: Climate risk management strategies for the Renewable sector

- **Protection gap of societies is widening at rapid pace** - > constitute profound market failure
- **Renewable industry set to grow** – yet no (national/regional/global) guidance on inclusion of climatic risks in project development & financing
- **Renewable energy consists of unique risk profile** - with little experience by different risk management stakeholder
- **Financial risk management (including insurance) is an important part of project feasibility** – including covering operation risks specific to weather variability & extremes
- **-> Strategic public private partnership for climate risk management in the renewable energy sector at national level -> roadmap**

# GIZ: a German federal enterprise

- Owned by the Federal Republic of Germany
- A company under private law
- Supports the objectives of the German Government in the field of international cooperation for sustainable development
- Business volume of over EUR 2.14 billion in 2015
- Main commissioning party: the German Federal Ministry for Economic Cooperation and Development (BMZ): almost EUR 1.7 billion in 2015
- Commissioned by well over 300 public and private-sector bodies

# GIZ Worldwide



- Operations in Germany and over 130 countries around the world
- Over 17,000 employees worldwide

# GIZ's expertise

## Economic and Social Development, Employment



- (Vocational) Education and Training, labour markets
- Financial Systems Development, Insurance
- Health and Social Protection
- Economic Policy and Private Sector Development

## Governance and Conflict



- Rule of Law and Security
- Public Finance and Administration
- Democracy, Policy Dialogue, Urban Development
- Peace and Emergency Aid

## Climate Change, Rural Development, Infrastructure



- Climate Change and Environmental Policy
- Forests, Biodiversity, Agriculture
- Rural development, Food Security
- Water, Wastewater, Waste Management
- Energy and Transport

# Advancing Climate Risk Insurance plus (ACRI+)

ACRI+ is breaking new ground and working on:

Renewable  
Energy  
in Barbados



Urban  
Resilience  
in China



Enterprises  
(SMEs)  
in Morocco



- **Innovative insurance** which is integrated into the individual phases of climate risk management
- **Comprehensive risk analysis** of extreme weather events
- Long-term solutions for renewable energy, urban development, industrial zones
- Making concepts and implementation experiences available to the **international climate dialogue (CoP, G7, G20)** for replication and scaling-up purposes

# The Integrated Approach to Disaster Risk Management (ACRI+ Film)

# Advancing Climate Risk Insurance

## Disaster Risk Management Phases



### Prevent

This phase comprises all the measures that help prevent or minimize possible damage from an event.



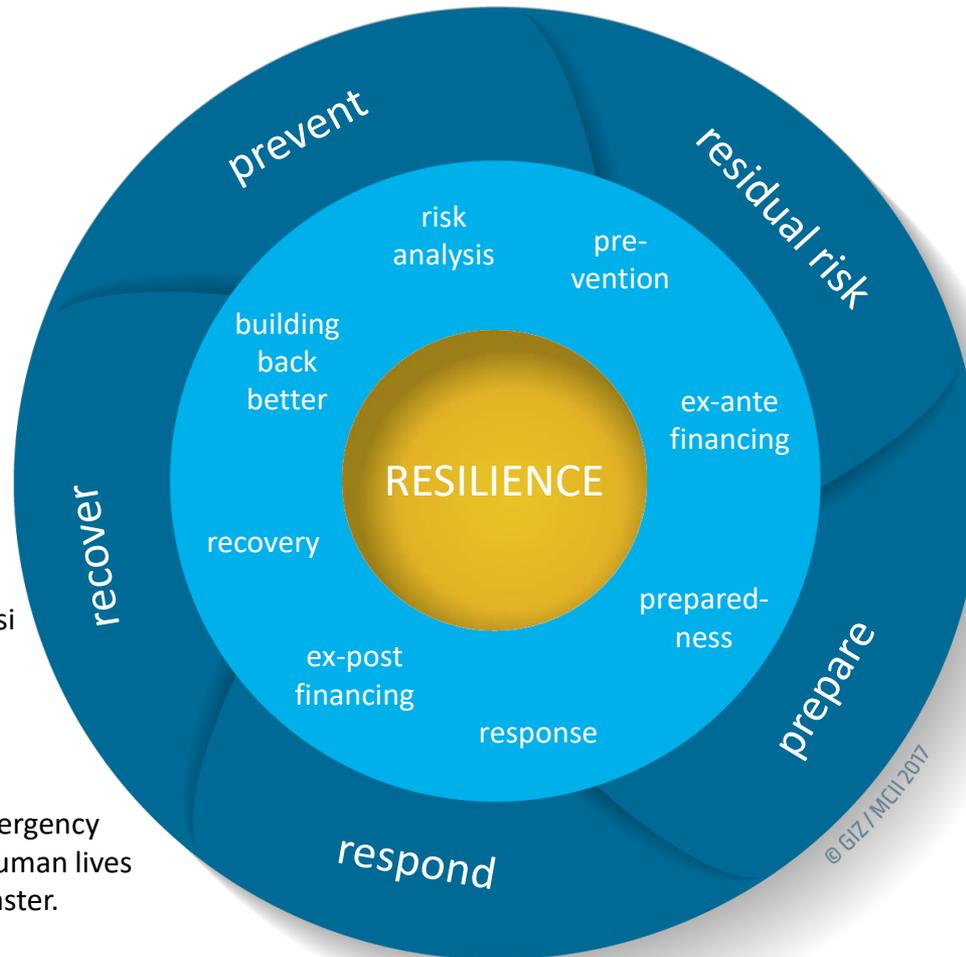
### Recover

After a natural extreme event hits, infrastructure and other parts of society must be rebuilt, so that people can resume their livelihoods as quickly as possible.



### Respond

This phase comprises all emergency measures aimed at saving human lives in the event of a natural disaster.



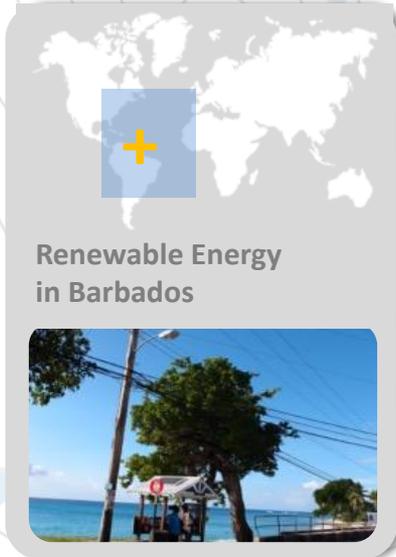
### Residual risk

Residual risk can be transferred to third parties using financial instruments such as insurance.



### Prepare

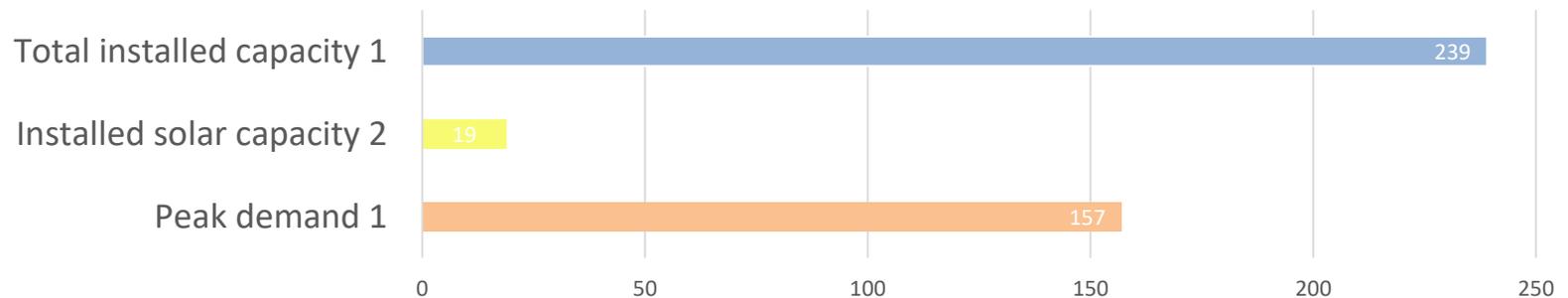
Preparedness contains a complex set of activities such as setting up early warning systems, developing contingency plans, organising various activities such as stockpiling of equipment, and coordination and training as cross-cutting issues.



# Applying Integrated Climate Risk Management on Renewable Energy in Barbados

# Current status and targets

## Electrical capacity and demand [MW]



- Approx. **90%** of the electricity produced is generated from fuel oil<sup>3</sup>.

## Renewable Energy Target

- **29%** of all electricity consumption generated from renewables by **2029** (Draft National Sustainable Energy Policy, 2017).
- **65% of peak electrical demand** by 2030 (NDC, 2016) – equivalent to 102 MW
- Private sector contributions in installing solar PV and other renewables (NDC, 2016)

1: EMERA Inc 2016 – oil-fired generation

2: IRENA 2016; 19 MW – including 10 MW St Lucy BL&P

3: Ministry of Energy, Sustainable Energy Framework

# Project Objective

- To develop a concept and **roadmap to ensure that existing and future energy generation, transmission and distribution is climate resilient**, using an integrated climate risk management approach.
- The **roadmap** can include aspects of:
  - Disaster risk management practices;
  - Risk reduction measures;
  - Risk transfer, such as **insurance**;
  - Preparedness and response planning;
  - Promotion of ICRM



# Hurricane damage in the Caribbean in 2016/2017

- **St. Martin:** 60% of houses uninhabitable and total power blackout for more than a week following **Irma**. However, 90% of a 900 kW PV rooftop installation withstood the 280+ km/h winds!
- **Dominica:** **Maria** “brutally hit” Cat 5 hurricane (260km/h), 27 dead, more than 50 people missing. About **90% of the structures** on the island have been either damaged or destroyed (lost roofs). Much of the island **remains without power and water**, and cut off from communications.
- **Haiti:** more than a million homes lost power after **Matthew**. E.g. Les Anglais, a community running on almost 100% solar power, **lost 40% of its panels**.



Westin Dawn St. Martin (Source: PVEurope, 2017)



Les Anglais Haiti (Source: Earth Spark International, 2017)

Sources: Reuters, 2017; NY Times, 2017; Guardian, 2017; Reliefweb; 2017; PVEurope, 2017; BBC, 2016; Earth Spark International, 2017)

# Harvey: damage on Barbados

- Hit Barbados on the **18th and 19th of August, 2017**
  - Winds up to **65km/h & 115mm rainfall** reported at Grantley Adams Airport
  - **Flooding**; at least one house swept away by the water
  - Some houses have **lost roofs and walls** due to the winds
  - **Power outages reported** in some parishes (St. Peter, Christ Church, St. Lucy) and New Orleans (Bridgetown), Haggatt Hall (St. Michael) and Woodland, Ellerton and Gall Hill (St. George).
- Last major impact on Barbados was **Janet** on the 22<sup>nd</sup> of September 1955

# Situation

- CCRIF pay-outs in the Region for the 2017 Atlantic hurricane season: **US\$ 50.7 Mio**
- Barbados is affected by impacts and damages from severe and **extreme weather** events and has received payouts:



- Climate modelling projections indicate an **increase in the intensity of hurricanes**
- The price signal of **insurance fails to act as an enabler for risk reduction**, as risk based premiums are not a priority consideration
- **Numerous ongoing activities** in Barbados and the region necessitate a very specific and concrete concept

# Barbados: Risk transfer mechanisms

- By **integrating risk transfer** into disaster risk management and climate change adaptation approaches, governments and individuals are able to:
  - **Soften the financial impact** through timely access to finance after a disaster;
  - Increase the effectiveness of the implementation of response measures such as **contingency planning**; and
  - **Address preventive measures** that reduce disaster-induced poverty traps and long-term development setbacks.
- Disaster and climate risk insurance schemes can thus form an important part of a **comprehensive risk management approach**



# The role of insurance

Insurance can ...

- contribute positively to risk reduction by **providing incentives** to policy holders to reduce their risk profile, e.g. through resilience ratings given to buildings
- also be framed as a form of social policy to manage climate risks (apart from constituting an autonomous private sector response to extreme events)
- [through] government measures to reduce or avoid risks also interact with insurance companies' willingness to provide cover.

# The role of insurance ...

- Yet insurance can also act as a constraint on adaptation, if those living in climate-risk prone localities pay **discounted or cross-subsidized premiums or policies fail to encourage betterment** after damaging events by requiring replacement of “like for like,” constituting a **missed opportunity for risk reduction**.
- The effectiveness of insurance thus depends on the extent to which it is linked to a **broader national resilience approach** to disaster mitigation and response (...).“

# The Integrated Climate Risk Management (ICRM) project in Barbados

ACRI+ promotes the ICRM approach in order to increase resilience

## Prevent, e.g.

- Hazard mapping: vulnerability of power infrastructure (power lines, power station, solar, wind or biomass generators)
- Understanding of climate projections
- Ongoing maintenance during minor hazards to ensure continuous resilience
- Design to withstand projected hazards
- Encourage and enforce building standards and codes
- Land use planning with potential restrictions

## Recover, e.g.

- 'Build back better' opportunity
- Design standards for resilient design
- Enhance building standards and codes
- Improved location based on risk mapping



## Respond, e.g.

- Rapid repair and maintenance, access to spare parts, expertise and capacity through pre-established institutions and channels
- Access to finance immediate after a disaster

## Residual Risk, e.g.

- Insurance for damage to the energy infrastructure (during construction and operation, such as property insurance, business interruption, third party liability)
- Insurance for low solar or wind output, shortfall of expected yield ("performance cover")

## Prepare, e.g.

- Early warning systems for energy suppliers
- Contingency plans for damage to power generation and transmission infrastructure
- Disaster preparedness processes are in place (training)

# Activities: 2017 / 2018: milestones and ideas

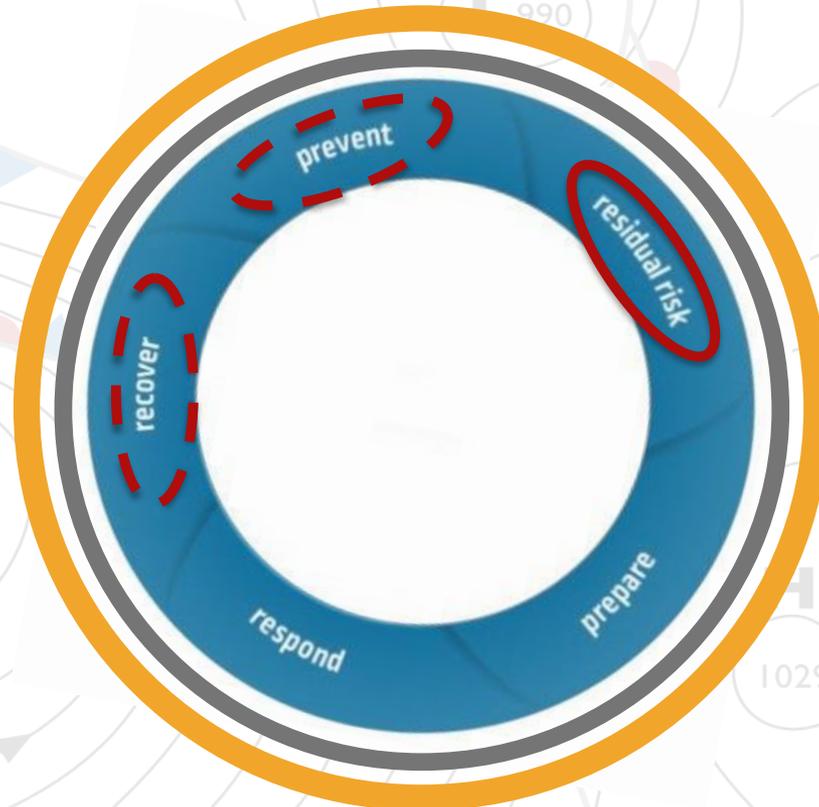
**STUDY 1**  
Scoping research ICRM

**Workshop 1**  
Today

Insurance and Finance  
toolkit

Gaps & barriers;  
action

**Workshop 2**  
2018



**Gaps and action 4**

**Gaps and action 5**

**Workshop 3**  
2018

**ROADMAP**

**Workshop 4**  
2018

# Activities: ideas for further work

- Insurance and finance toolkit
- Ideas for the other research:
  - Status quo of Preparedness and Response, contingency plans
  - The role of building standards, governance and risk management in Barbados with regards to solar PV installations and insurability
  - ...
  - ...

# Milestone One:

**Study 1:** Scoping research including gap analysis to inform Integrated Climate Risk Management (ICRM) Roadmap on Renewable Energy in Barbados, specifically looking at prevention and risk transfer.

→...

→...

→...

Nicholas Grainer, Climate Change Adaptation and Disaster Risk Reduction Specialist

# Thank you

**Dr. Sandra Schuster, Sönke Kreft, Matthias Range**

Integrated Climate Risk Management /  
Advancing Climate Risk Insurance Plus (ACRIplus)

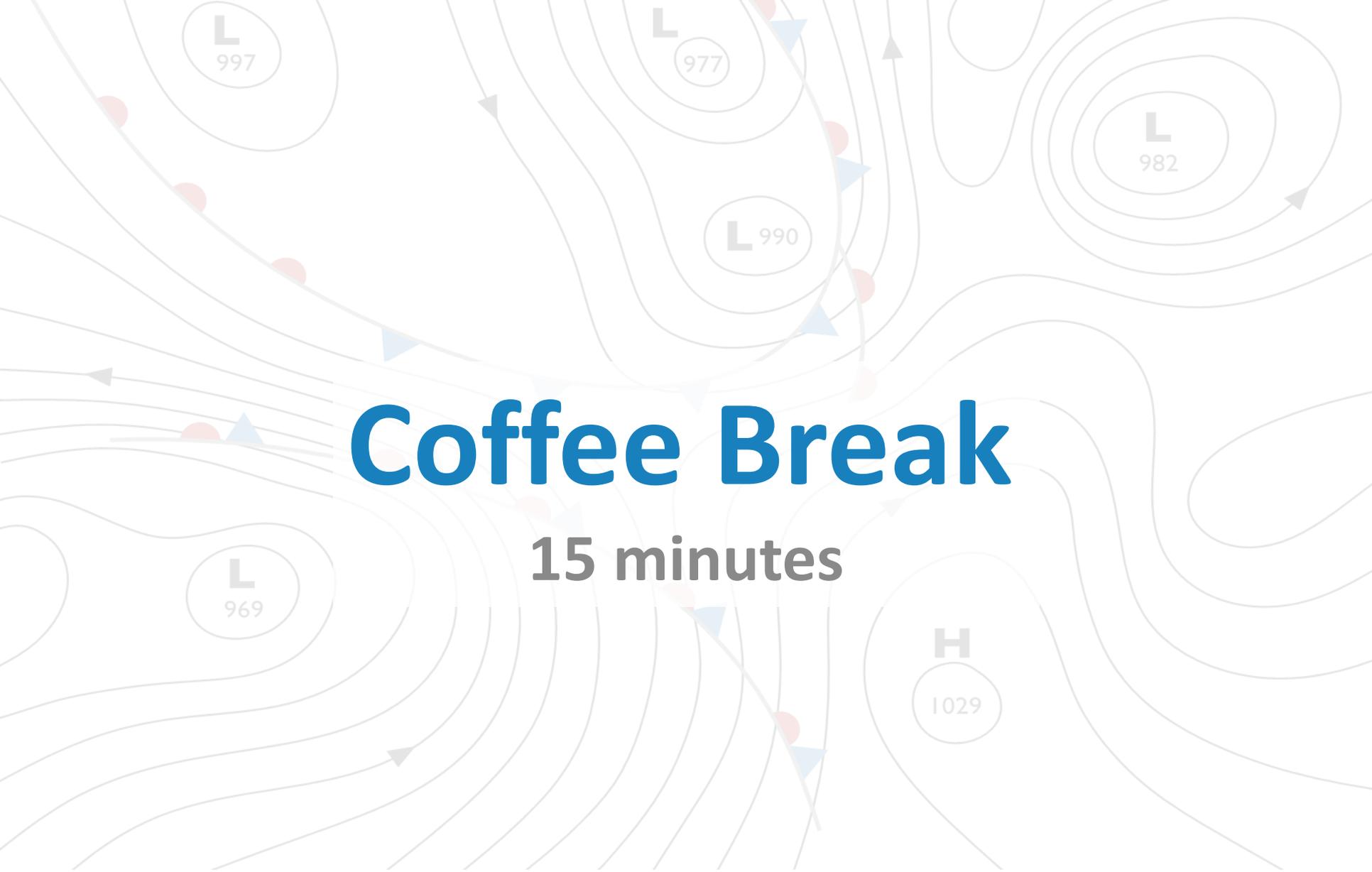
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

T + 49 (0)89 54479686 13

M + 49 (0)151 52619538

E [matthias.range@giz.de](mailto:matthias.range@giz.de)

I [www.giz.de](http://www.giz.de)



# Coffee Break

15 minutes