

CLIMATE ACTION 2016

CATALYZING A SUSTAINABLE FUTURE

Innovation in insurance product development:

- climate resilience building
- de-risking investments

Ernst Rauch
 Head Corporate Climate Centre
www.munichre.com

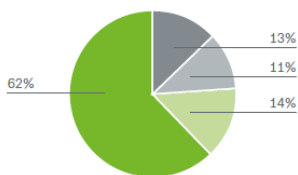


Weather related losses worldwide 1980 – 2014

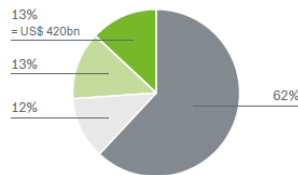
Low income economies suffering most



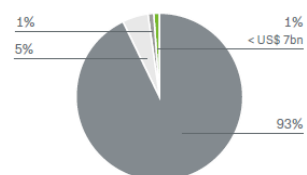
850,000 Fatalities¹



Overall losses² US\$ 3,300 bn



Insured losses² US\$ 940 bn



Income Groups defined by World Bank (2014)

- High income economies (GNI ≥ 12,746 US\$)
- Upper middle income economies (GNI 4,126 – 12,745 US\$)
- Lower middle income economies (GNI 1,046 – 4,125 US\$)
- Low income economies (GNI ≤ 1,045 US\$)

1) Number of fatalities without famine
 2) Losses in 2014 values, adjusted to inflation based on individual country CPI.

Climate Risk Insurance

regional pools and satellite based risk analysis reduce insurance gaps



Regional Insurance Pools

Insureds: governments / institutions (focus on low income economies)

- African Risk Capacity (ARC; <http://www.africanriskcapacity.org/home>)
- Caribbean Catastrophe Risk Insurance Facility (CCRIF; <http://www.ccrif.org/>)
- Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI; <http://pcrafi.sopac.org/>)
- G7 Project InsuResilience (https://www.g7germany.de/Content/DE/Anlagen/G8_G20/2015-06-01-g7-climate-risk-insurance.html)

Satellite based risk identification/analysis and parametric pay-out trigger

- e.g. African Risk View (UN World Food Programme)
- quick payout based on parametric risk definition (meteorological data)

© 2016 Munich Re Corporate Climate Centre (April 2016)

3

Insurance: driver of investments in greener economies

de-risking low carbon investments through risk transfer solutions



- New/innovative **risk transfer solutions** along the value chain of e.g. renewable energy technologies: multi-year performance guarantees

 <p>Photovoltaics</p> <ul style="list-style-type: none"> ▪ Performance Guarantee for PV manufacturers ▪ Option cover for operators ▪ Project cover for investors 	 <p>CSP</p> <ul style="list-style-type: none"> ▪ Performance Guarantee for CSP manufacturers ▪ Delay and Output cover for EPC contractors 	 <p>Wind</p> <ul style="list-style-type: none"> ▪ Serial loss cover for manufacturers and suppliers ▪ Offshore logistic delay cover ▪ Maintenance cost overrun
 <p>Geothermal</p> <ul style="list-style-type: none"> ▪ Cover for Drilling success / exploration risk 	 <p>LED</p> <ul style="list-style-type: none"> ▪ Performance Guarantee for manufacturers ▪ Performance Guarantee for municipalities as co-insured 	 <p>Solar/Wind/Water</p> <ul style="list-style-type: none"> ▪ Coverage of shortage of planned output in running a power plant due to insufficiency of average sunlight / wind / water

- Insurance industry as **investors**: Munich Re up to EUR 8 bn renewable energy/infrastructure investments

© 2016 Munich Re Corporate Climate Centre (April 2016)

4

Key Takeaways



- People in low income economies suffer most from natural catastrophes
- Reduction of vulnerability and strengthening resilience is key to reduce humanitarian suffering and support sustainable economic development
- Know-how of global insurance industry with natural catastrophes, transfer of expertise and risks can contribute to resilience building
- Public-private-partnerships (PPP): governments/supranational organisations <-> private insurance sector are drivers of resilience in developing countries

5