



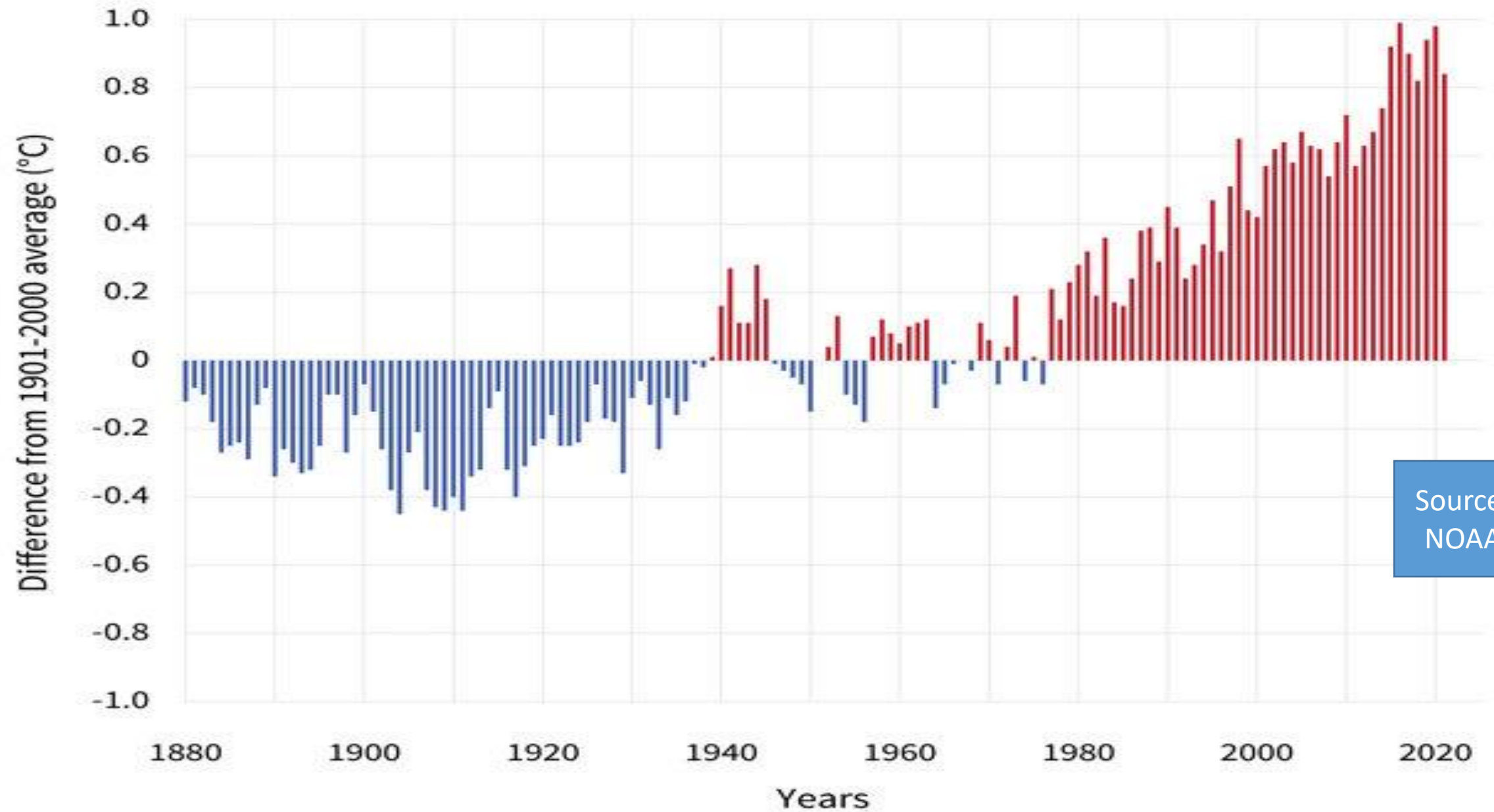
Adaptive Social Protection Forum: Social Insurance & Climate Change in Indonesia:

An actuarial perspective on climate change and social insurance

Simon Brimblecombe, CTA and Head of Regional Actuarial Services Unit, ILO Bangkok

June 8th 2023

GLOBAL AVERAGE SURFACE TEMPERATURE



Source:
NOAA



- **More extreme & erratic weather** : temperatures, tropical storms, flooding, sea level rise, flooding, wild fires, landslides
- **Falling agricultural yields & aggravation of existing crises** : coastal regions particularly vulnerable
- **Resource scarcity & environmental degradation** compounds challenges
- **‘Secondary’ impacts**
 - Increased social unrest & political instability
 - Disruption to health services & new channels for disease transmission
 - Migration and climate refugees (250 million – 1 billion by 2050)
- **Asia and the Pacific particularly vulnerable**
 - Region with highest flood-related losses (USD 30bn p.a.)
 - Total economic losses from disasters of USD 60 billion p.a.

Role of actuaries



- Effective response to climate change needs to be driven by **risk management**
- Actuaries assess and project **future impacts of risk events**
 - **Frequency of events** – how often they will happen
 - **Severity of events** – financial impact
- Particularly relevant for **climate change**
 - Insurers and re-insurers
 - Social security
- For **example**:
 - Impact on mortality and morbidity ?
 - Claims for unemployment ?
 - Contributory capacities ?

**The Climate Change Adaptation
Gap: An Actuarial Perspective**

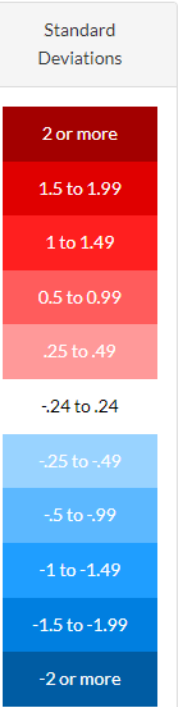
**Climate Risk
Task Force**

May 2023

The map below shows an animation of moving 5-year average values for all regions since 1961.

Fast

1966 Summer

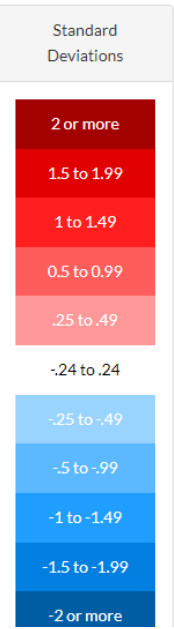
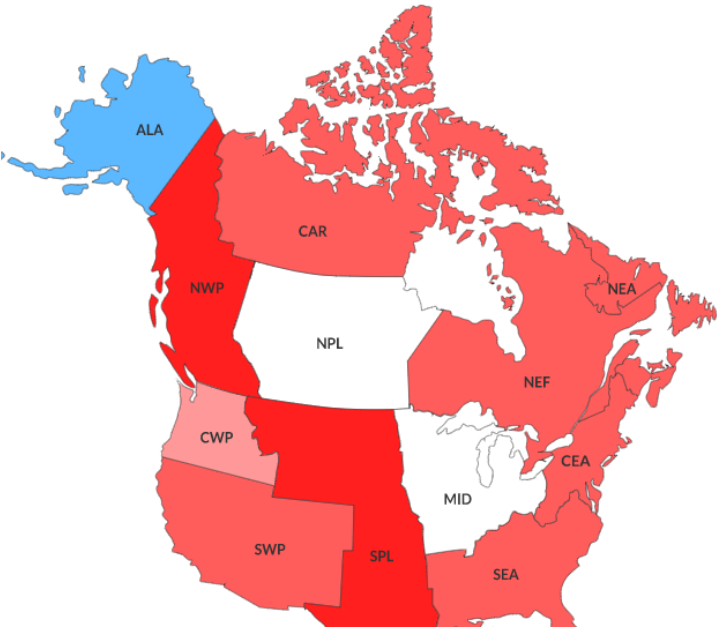


ACTUARIES CLIMATE INDEX

INDICE ACTUARIEL CLIMATIQUE

shows an animation of moving 5-year average values for all regions since 1961.

2022 Fall



ACTUARIES CLIMATE RISK INDEX

<https://actuariesclimateindex.org/home/>

Guidelines

Actuarial Work for Social Security

2022



Guideline 34. Actuarial input into the understanding of catastrophic risk

The social security institution seeks actuarial input in identifying relevant catastrophic risks and deepening the understanding of such risks.

Quick links: [Home](#) » [The Actuary Issues](#) » [February 2018](#) »

02

Social security in a new climate

Tuesday 2nd February 2018 — updated 8:17pm, Wednesday 29th April 2020

Simon Brimblecombe looks at the role of social security in helping to deal with the effects of climate change around the world





Role of Social security actuaries

1. Assessing impacts
2. Adapting benefits to new realities
3. Climate ready administration, management & communication
4. Designing and financing an active role in mitigation

1: Assessing impacts

- Actuarial valuation
- Scenario testing
- Taking into account:
 - Mortality and morbidity assumptions
 - Inequalities in health & life expectancy
 - Migration flows
 - Unemployment insurance claims
 - Economic growth assumptions

2: Adapting Benefits to the new reality

- Costing increases in coverage
- Assessing if current benefit structures still appropriate:
 - Do they reflect number and frequency of future extreme events?
 - Duration of benefit payments if livelihoods destroyed ?
- Design and financing
 - Fossil fuel subsidies ?
 - Role of workers, employers and Governments ?

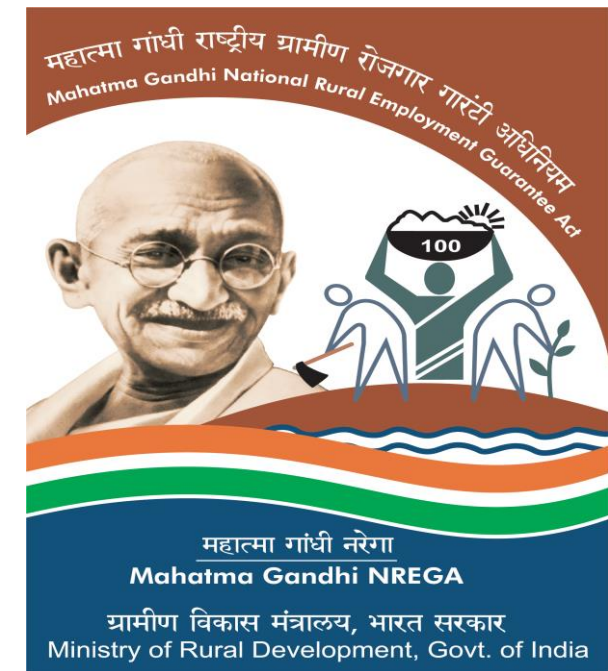
3: Administration and management

- Access to benefits
 - **US SSA**: Special hotlines, additional staff employed to expedite claims for death, survivor & disability benefits
 - **Philippines SSS**: Advanced grant of pensions, subsidised calamity loans, streamlined claiming
- Disaster recovery
 - Systems go down – what happens next?
 - Communicating with members ?

Important that social security institutions have a risk management framework

4: Mitigation

- **India: *Mahatma Gandhi National Rural Employment***
 - Water conservation, drought prevention, flood control etc
- **Brasil: *Bolsa verde***
 - Twin goals: poverty eradication & conservation
- **Social security Fund Investment**
 - What should be done ?
 - Actuarial input to understand liabilities and quantify risks
 - Liquidity risk ? Construction risk ?



ESG

Infrastructure investment

Environmental

- Disinvestment from coal
- Investing in renewable energy
- Local economic transition

Social

- Avoiding use of child labour
- Companies who support institutions
- Reduce inequality

Governance

- Responsible pay and ownership
- Fosters good practice



The UN Principles for Responsible Investment since 2006 – over 200 institutions in Asia have signed up

Social security responses require actuarial input

Adapting
contributions

Partial or
temporary
unemployment
schemes

Economic
transition
measures

Risk Management
framework

Emergency
administration
response
procedures

Change
investments of
Reserve Funds

Increasing benefit
level and duration
temporarily



Environment

Air Pollution Cuts Lives Short by More Than Two Years in Thailand

Long-term exposure to fine particulate pollution is shortening the average Thai's life expectancy by more than two years.

WWF Living Planet Report: Devastating 69% drop in wildlife populations since 1970

Posted on 13 October 2022

Wildlife populations - mammals, birds, amphibians, reptiles and fish - have seen a devastating 69% drop on average since 1970, according to WWF's Living Planet Report (LPR) 2022.



Dangers of invading nature become ever starker

Infections that jump from animals to people are on the rise, as Covid has shown



Why Is Everyone Talking About a Global Power Shortage?



Water war risk rising on the Mekong

China's newly consolidated ability to stop the river's flow to SE Asia points to an emerging new regional flashpoint

Thank
you

