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# GIRO50 Conference 2023

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# To Price Flood Risk- reflective, or not

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# Intro and Purpose of Today's Talk

## UK Flood risk insurance pricing is currently underpinned by Flood Re

- Ensures “all” policyholders have affordable flood insurance available

## Flood Re is legislated to end in 2039, so a new solution will be needed

## Our presentation here explores

- What represents “fair” for flood risk insurance pricing
- Pros and cons of different pricing extremes
- How other countries approach flood insurance pricing
- Potential options for the UK for 2039 onward



# Background and history to UK flood risk pricing

## History of flood risk pricing\*

- Broad pooling
- Little unaffordability

## What changed?

Pricing ↑ reflective over time due to:

- ↑ computing power
- ↑ data, research & understanding
- ↑ model sophistication (Flood & Actuarial)
- Significant flood events (e.g. 2007)

i.e. Increased unaffordability (“red-lining”)  
→ Rising adverse publicity

## Flood Re formed

- Funded by levy with 2039 end
- Many years to develop
- Scope: pre-2009 homes
- Eliminates some unaffordability issues



\* <https://www.actuaries.org.uk/system/files/field/document/C1%20How%20the%20UK%20can%20end%20reliance%20on%20Flood%20Re.pdf>

# Looking ahead: The complex landscape

## Wide range of factors affecting flood insurance



### Government

- Flood defences (UK government & associated agencies like Environment Agency)
- Planning: local government (and national)



### Housing market, policyholders and politics

- Value of homes underpinned by insurability
- Research\* => house prices distorted due to significant flood pricing cross-subsidy

\* [Bank of England Staff Working Paper No. 995](#), [Bayes Flood risk research](#) and [Paul Sayers' Flood Disadvantage report](#)



### Insurers, actuaries and modellers

- Flood model developers / actuaries, data and model sophistication
- Flood Re and transition thro' 2039



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# What is fair when it comes to Flood Insurance Pricing?



# Pricing Options: Risk Reflective vs Fixed Tariff

## What do we mean?

Fixed Tariff = No risk reflection

Fully risk reflective = Taking account of all info and modelling sophistication



## Both extremes have their drawbacks

Flat premium for all  $\Leftrightarrow$  “unfair” cross-subsidy:  
• Distorts property market

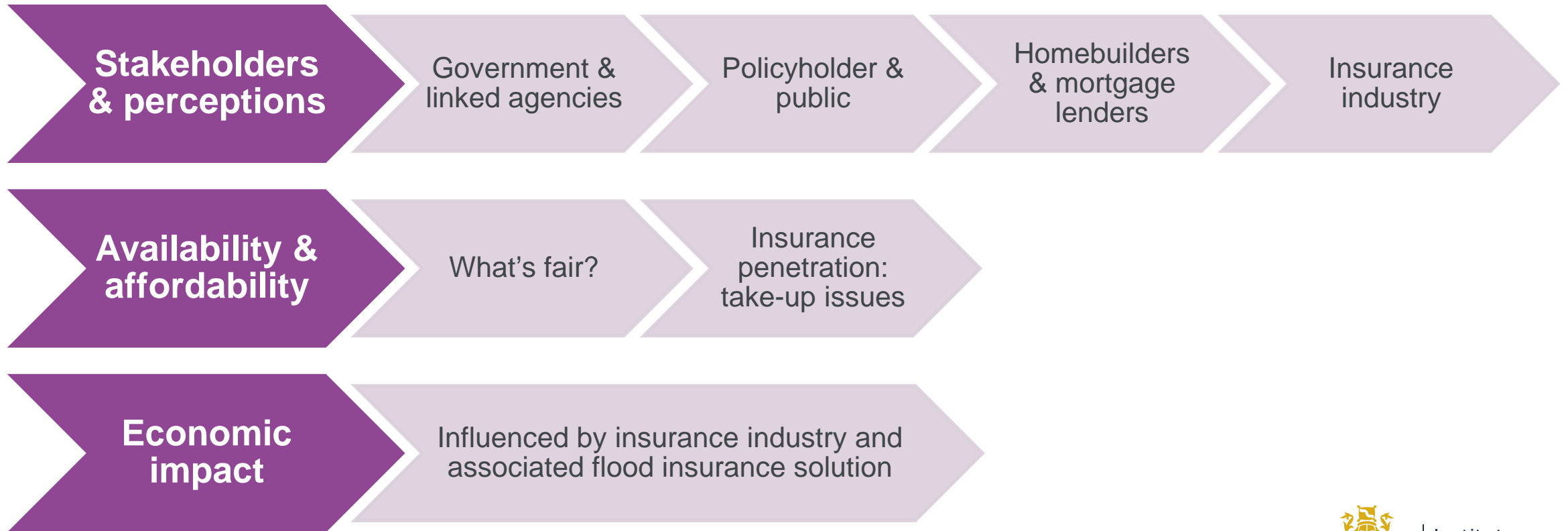
Fully risk reflective: Some homes become totally uninsurable and unsellable



Let's look at these two extremes from different perspectives



# Many different perspectives





# Key stakeholders and potential motivations

## Government (& Environment Agency)

- Minimise risk of criticism
- Competing pressures financial and bandwidth focus
- Responsible for planning and regs - reluctance to make unpopular changes
- Responsible for funding flood defences



## Policyholders

- Need reduced risk of flood and potential impact
- Want protection vs risk of major financial loss: flood or devaluation of value of home
- Like stability in premium cost



## Mortgage Lenders

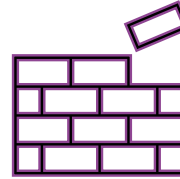
- Lending beyond exit in 2039



# Key stakeholders and motivations

## Homebuilders

- Commercial entities with focus on profit
- Focus on maximising land value
  - Build homes wherever permitted
  - Required to comply with Planning Requirements and Building Regs



Note: Flood = planning issue (for Local Authority planners) rather than building regs

## Insurers

- Commercial entities with focus on profit
- Required to comply with insurance regulation
- Represented by ABI



... and Flood Re

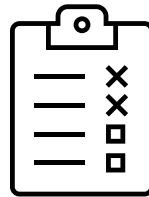


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# Availability / affordability: fully risk reflective

## Pros

- Eliminates / avoids cross-subsidy
  - reflects underlying risk reality
- Avoids market distortion
  - E.g. artificially inflated house prices
- Arguably “Fair”
  - At least with full knowledge and stable conditions



## Cons

- Policyholders exposed to external factors
  - Can lead to significant volatility
- Consider the following scenarios:
  - Flood defences not maintained
  - Ongoing development on flood plains
    - also affects risk for existing homes
  - Climate change and flood event impact on modelling ... and premiums

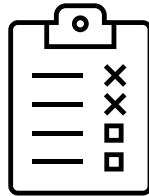
Some homes potentially uninsurable, e.g. Homes next to a river that floods regularly  
Homes near East Anglia (coastal erosion)



# Availability / affordability: fixed tariff

## Pros

- Recognises flood risk as national issue
- Aligns with flood defence spending
- Arguably “Fair”
  - Government controls where/how homes built & flood defence strategy & funding



## Cons

- Distorts housing market
  - underpins high house prices in high risk areas
- Sub-optimal use of scarce resource
  - Uneconomic to protect all homes at high risk
- Arguably “Unfair”: extent of cross subsidy
  - E.g. where new owner purchases home in “full” knowledge of the flood risks

No competitive market

Encourages continued living and development in areas of high flood risk



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# What do other countries do?



# Flood insurance in Switzerland

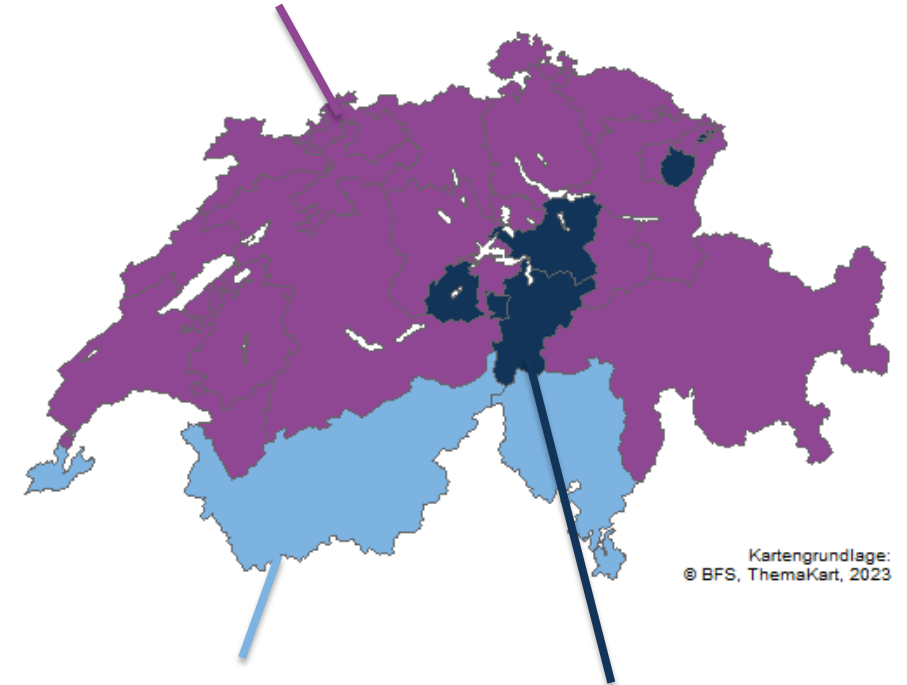
Switzerland has just under 9 million inhabitants in 26 cantons:

- Disaster insurance including flood is included in buildings insurance
- Public sector monopoly (KGV) in 19 cantons. Flat rate in each (percentage of sum insured), but the rate can vary by canton
- Private insurance market in 7 ("GUSTAVO"). Flat rate set by federal government

KGVs also play a significant role in physical resilience:

- Feedback on design features of individual properties
- Finance improvements during reconstruction post-disaster
- Consulted on land use planning
- Involved in development and awareness of disaster-resilient construction standards and materials
- Supervise work of fire brigades, and finance training and equipment

A KGV provides buildings cover (83% of inhabitants)



**Non-mandatory cover from private sector insurance market (14% of inhabitants)**

**Mandatory cover from private sector insurance market (3% of inhabitants)**

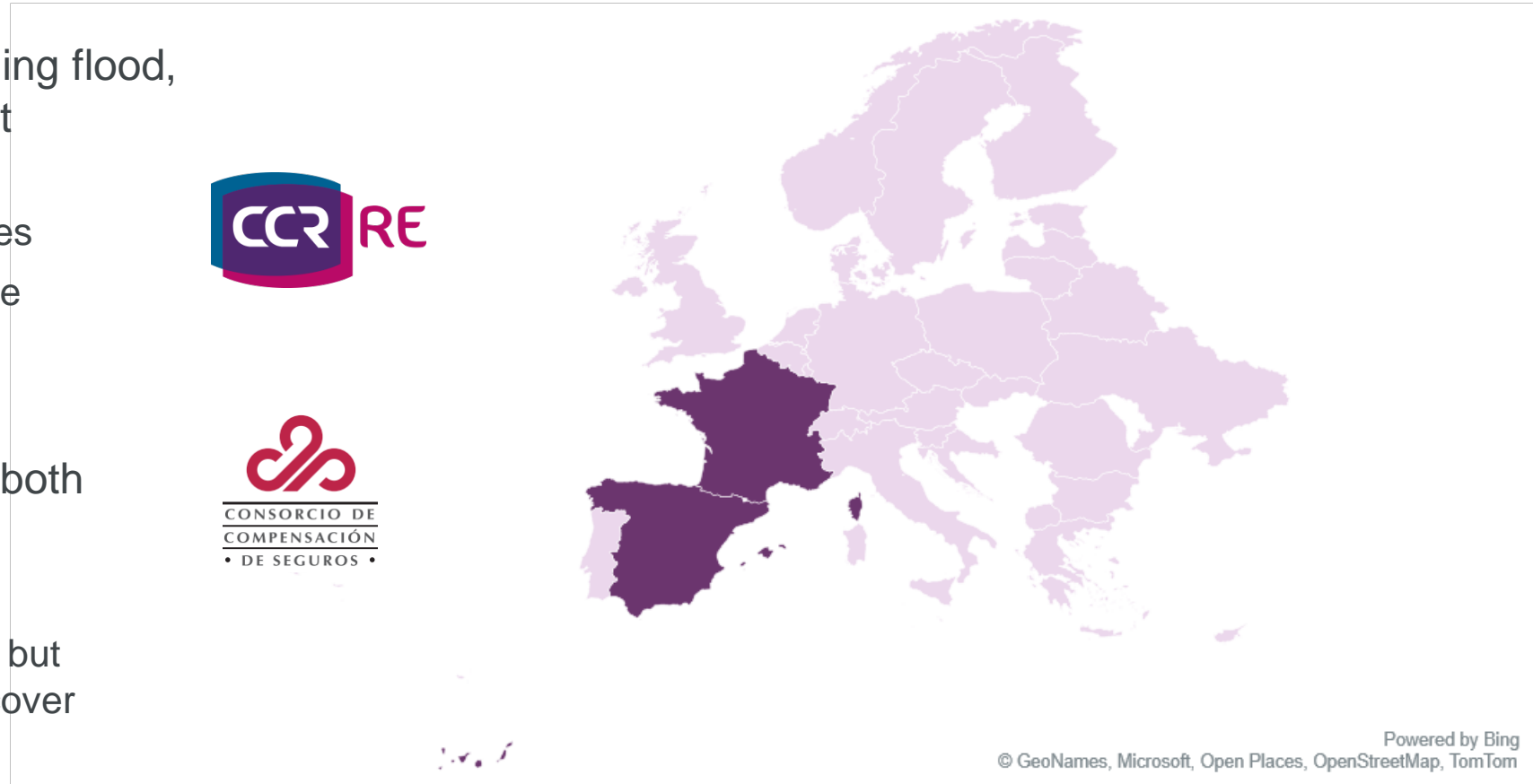
Population statistics: Federal Statistical Office



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# Flood insurance in Spain and France

- Catastrophe insurance, including flood, in France and Spain offered at geographically flat rate
  - through protection gap entities
  - CCS in Spain, CCR in France
- Both are multi-peril schemes
- Insurance penetration high in both countries:
  - France: cover is mandatory
  - Spain: cover not mandatory, but property policies must also cover catastrophes
- Both are reasonably successful in making insurance for catastrophes widespread and affordable



# Flood insurance in Germany

- Flood cover is an optional extension of domestic property insurance
- Perception that it does not offer good value, either for those at high or low risk of flooding
- Insurance penetration has historically been low
- Recommended rates are published by the Insurance Association
- Following 2021 flooding:
  - State stepped in to pay some claims due to low insurance penetration
  - Calls for flood cover to be mandatory, now mostly forgotten
  - Expectations gap



## The demand for compulsory insurance

from Karin Finkenzeller and Bert Losse  
July 20, 2021

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Passau: A man walks with his dog on the waterfront past a travel center that has been sealed off the water of the Danube with sandbags in front of the doors.  
Picture: dpa

The election campaigners Söder, Scholz and Laschet promise aid at the expense of taxpayers. But who will be responsible for the risks of natural disasters in the future?

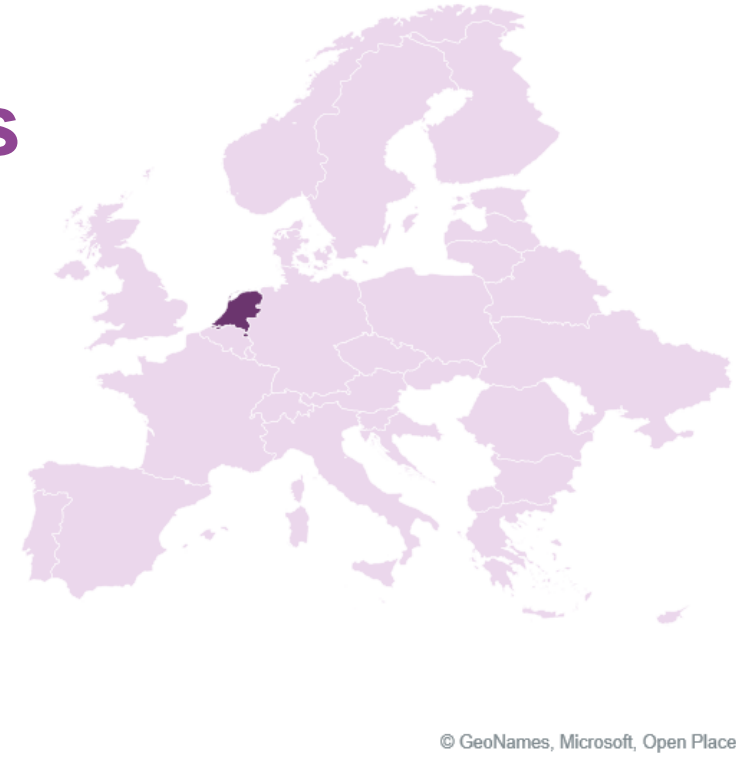


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# Flood insurance in The Netherlands

- High exposure to flood risk, and flood-sensitive areas densely populated
- Flood risk perceived as issue of collective survival
- State has invested heavily in land reclamation and water management
- Flood due to failure of "primary defences" considered uninsurable, so residents must rely on the State
- Flood from rain, streams, canals and minor rivers may be insured, but penetration is low
- Following the Limburg floods in 2021, the government stepped in with the 'Disaster Compensation Act'



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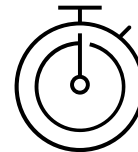
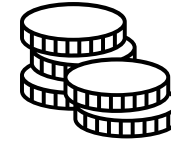
# What next for the UK, post-2039?



# What next for UK beyond 2039

## Pros and Cons of current solution

- Essentially risk-reflective with a cap
  - ✓ Ensures many policyholders can get affordable insurance cover
  - ✓ Overcomes uncertainty and volatility arising from improved model sophistication and development
  - ✓ Embedded value: The current system is already in place and working smoothly
  - ✗ Disincentivises action to reduce or mitigate risk
  - ✗ Distorts housing market, underpinning high value of attractive riverfront homes
  - ✗ Many homes and commercial buildings excluded
  - ✗ Current solution has a hard end date of 2039
- Competitive market up to the capped level of risk
- Growing challenge:
  - Climate Change, rising population, increased home-building and urbanisation



# Current Flood Re Transition Activity

## Flood Re's Theory of Change (requiring broad input)

- Reduce flood risk
- Reduce damage and cost of flooding
- Achieve an efficient market

## Activity to enable change

- Understand, Engage and Lead: consulting and engaging with industry
- Property-level Flood Resilience (PFR)

## Actions underway

- Build back better – already implemented
- Wider PFR for all homes via subsidies (under consideration)
- Development of Flood Rating for housing market transactions



# Challenges faced in developing a new solution



## Government

- Limited funding and bandwidth
- Political environment unlikely to help with development of solutions



## Homebuilding market and Insurance industry

- Builders and insurers commercially focussed
- Both work to the rules and regs set out
- Flood rating helpful, but not a panacea



## Policyholders

- Make decisions based on current environment
- Limited consideration of long-term implications
- Education on key issues unlikely to be sufficient



# Why this all matters?



- Large number of homes exposed to risk of flood ... not just London
- Flood Re ensures affordable insurance for some homes
  - o but not all and not business
- Flood defences help, but not always



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# What next?

With 2039 approaching,  
Inaction is not an  
option!!!

Potential solutions  
and who to lead?

Leading

- Stakeholders with sufficient influence?
- Flood Re well placed but limited remit
- Government central to all aspects, but limited in other ways

Range of options

- Current Flood Re solution:
- Convert to PLC or sell
  - Extend beyond 2039
  - Evolve with Govt more involved
    - ~ financially + planning / flood defences
    - ~ extend coverage

- Much greater investment in flood defences
- Legislate flood insurance
- What else?



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# Questions

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