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How should society choose where to direct flood resources?

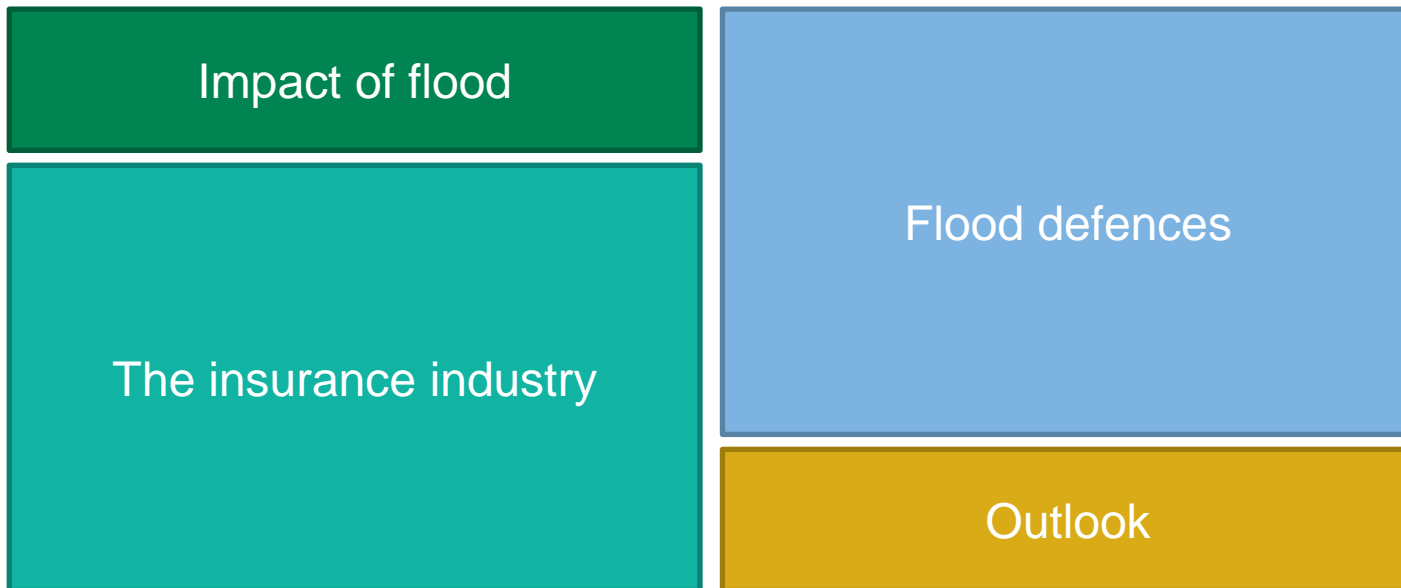
Philippa King, LCP

Neil Chapman, Willis Towers Watson

IFoA Flood Working Party



Overview



Impact of flood



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Impact of flood



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Impact of flood



Impact of flood



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Impact of Flood: Europe 2000 - 2016

Flood Events
268

People displaced
>1m

Insured losses
>€62bn

Fatalities
1296

Losses insured
30%



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Impact of Flood UK: Christmas 2015

Number of claims
22,000

Families displaced
>3,600

Insured losses
£1.5bn

Total losses
£5bn

Avg household claim
£50k



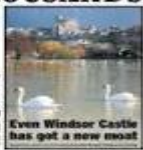
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How do we get it right?



LEARN FLOOD DRILLS. LONDON WARNED

NOW THOUSANDS FACING FLOOD MISERY
Riverbanks keep bursting



FURY AT FLOOD FATCAT BONUSES

£6BN FLOODS SHAMBLES



Anger mounting over cuts to Storm Frank to bring 70mph defences as cost of misery rises | winds & another 80mm of rain



SPEND OUR FOREIGN AID ON BRITISH VICTIMS OF FLOODING

FLOODS SWAMP £48M DEFENCES



Why bother with flood defences?
My insurance will cover it!



Uninsured flood victims facing billion-pound bill



New flood insurance scheme to cut bills by hundreds of pounds



Flood victims facing ruin turn on the PM



- Prime Minister backled as he visits northern England
- Cameron denies 'North-South divide' in flood spending
- 'Complete rethink needed' on UK defences, warn officials
- Cost predicted to rise to £5bn, with more rain on way



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The insurance industry

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Research
Shaping the future
Networking
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Enterprise and risk
learned society
Opportunity
International profile
Journals
Support

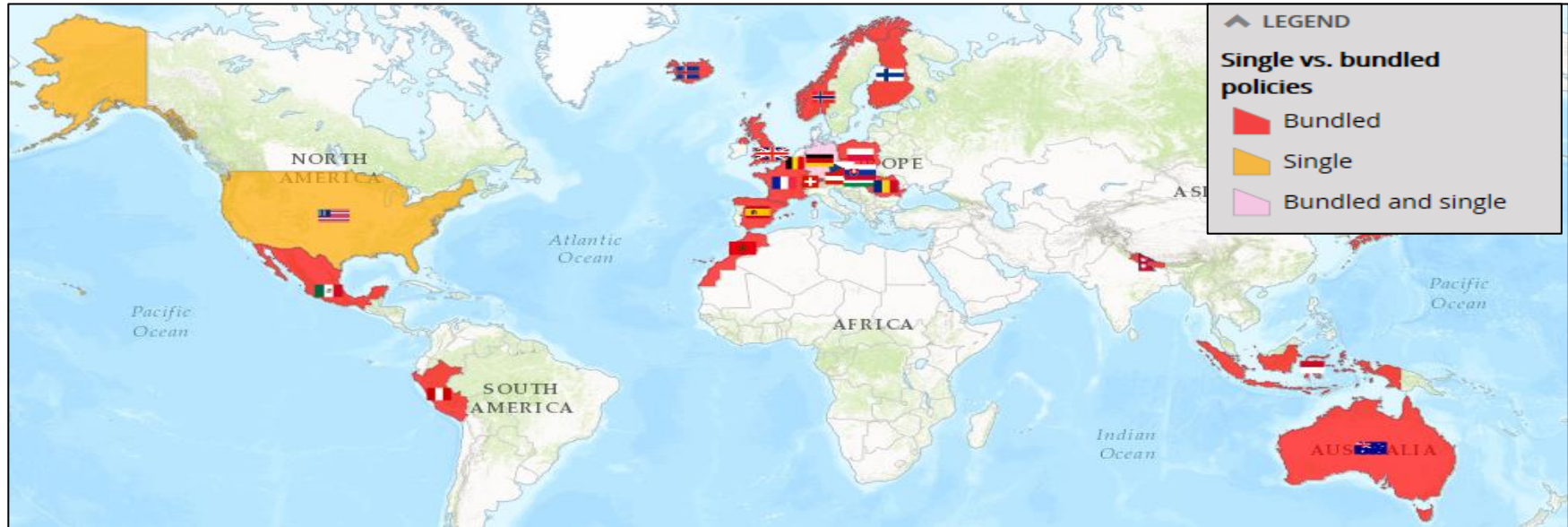
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Flood insurance obligations

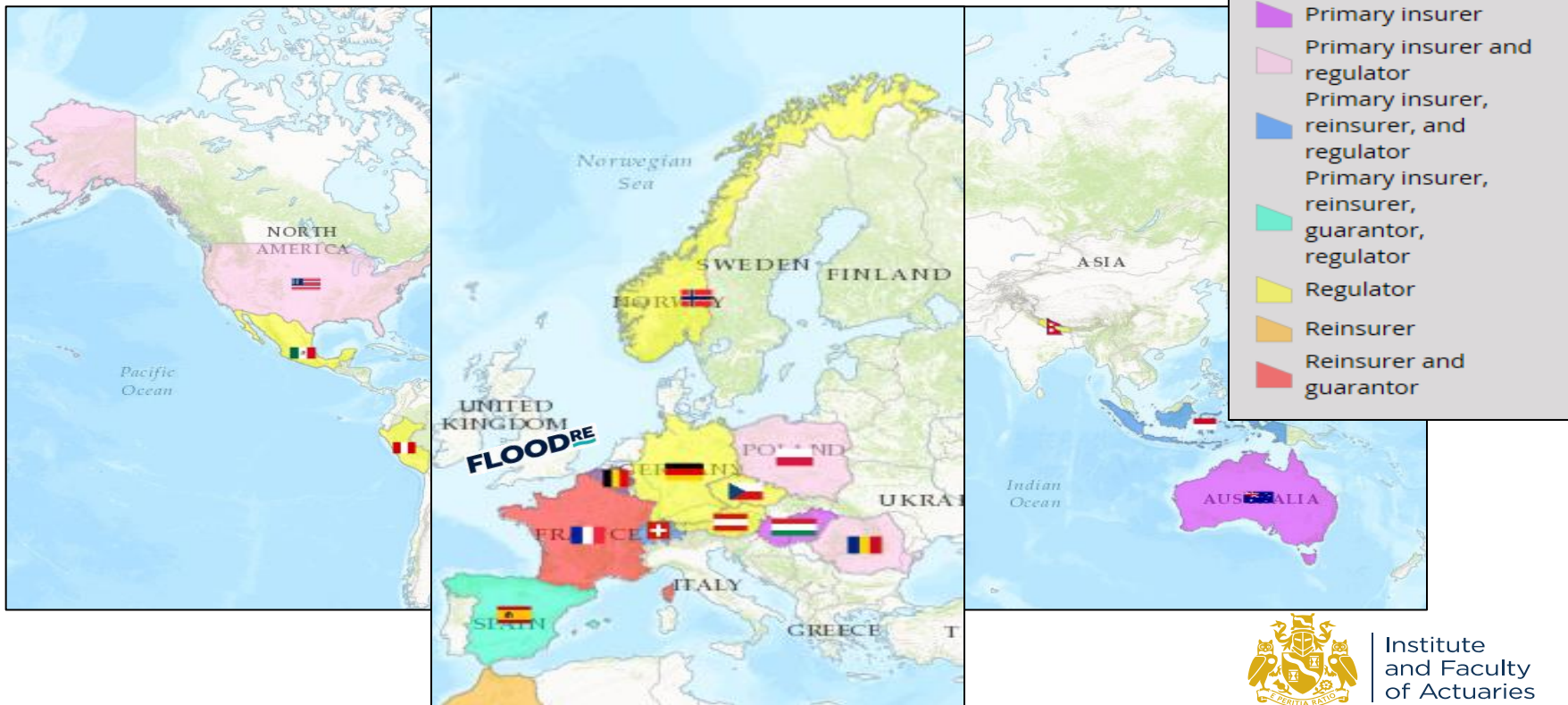


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Flood policies single vs bundled



Government in flood insurance



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What is Flood Re?

FLOODRE

Homes built
after 2009

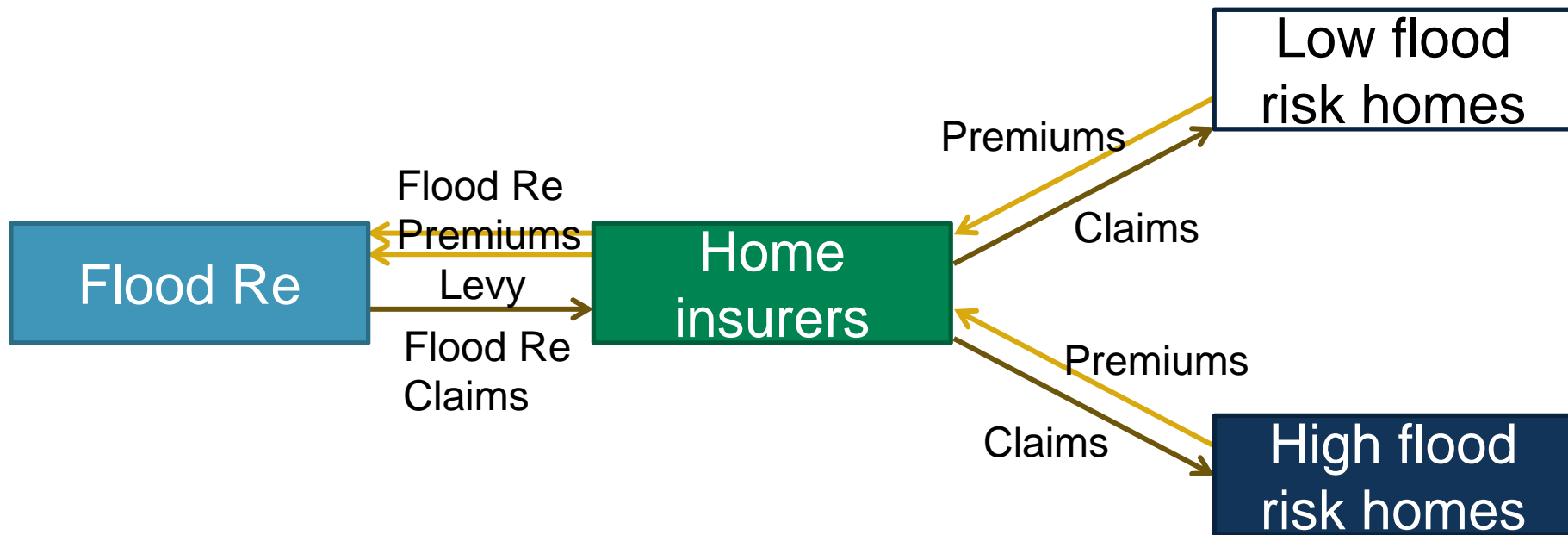
Commercial
properties

Buy to lets



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How does Flood Re work?

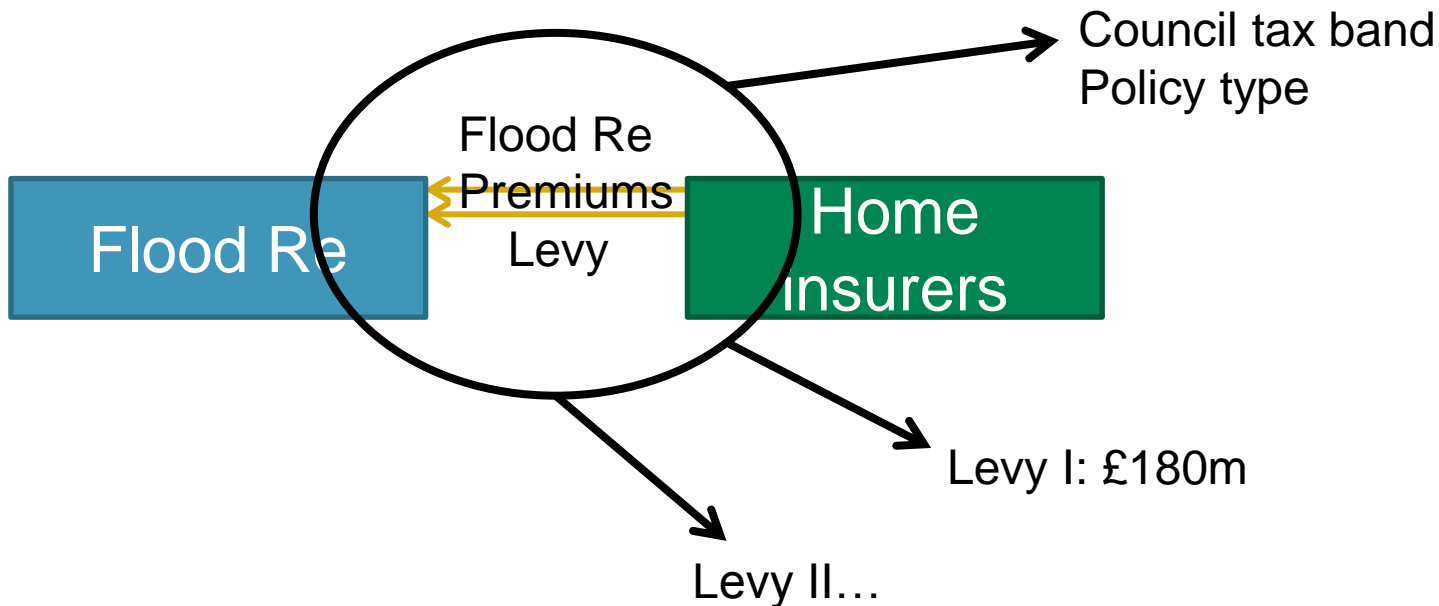


High risk homes: 1-2% highest risk, ~350,000



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How does Flood Re work?



High risk homes: 1-2% highest risk, ~350,000



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Flood Re considerations

Strengths	Issues





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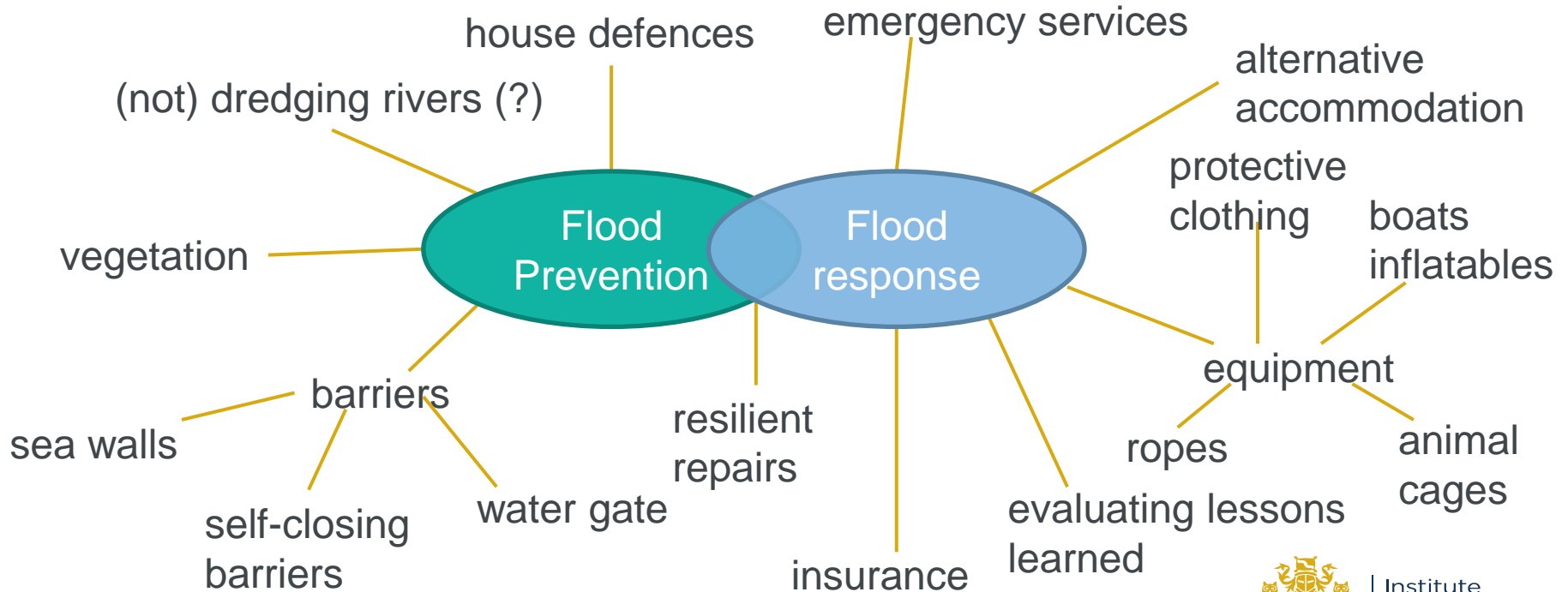
Flood Defences



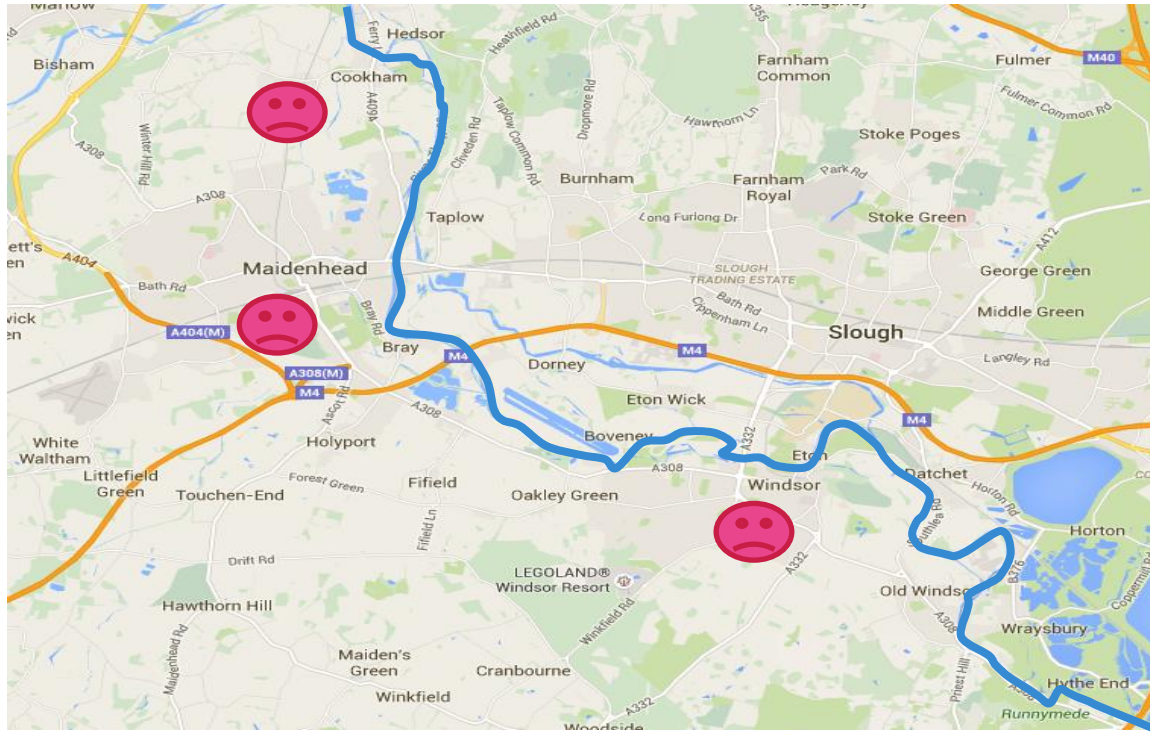
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Flood defence and response methods



Case study: Thames flooding



- Option 1: Divert water from river in times of flood
- Option 2: Flood proof homes



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Cost-benefit analysis – divert water

	Cost		Benefit		Total
Construction	Scheme	£100m	Selling minerals from	£5m	- £155m
	Transport disruption	£10m	dredging		
	Maintenance	£50m			
Economic			Commercial properties protected	£80m	+ £80m
Environmental		£5m	Parks, boating facilities, wildlife reserves, fish		- £5m + social
	Downstream flooding (affects 20,000 people)	£160m	Four floods prevented	£200m	+ £60m
Social	Reduced property	£30m	Property values increase	£50m	
		£355m		£335m + social	- £20m + social

Assumptions: Costing over 65 years
 Scheme prevents 4 major floods in that time



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Cost-benefit analysis – flood proof homes

	Cost	Benefit	Total
Construction	3,000 homes £20,000 per home £60m		- £60m
Economic			
Environmental			
Social	Continued flooding Displacement Clean up	70% reduction of repair costs	£140m + £140m - social
	£60m	£140m	+ £80m social

Assumptions: Assumes 4 major floods over 65 years
Ignores downstream homes

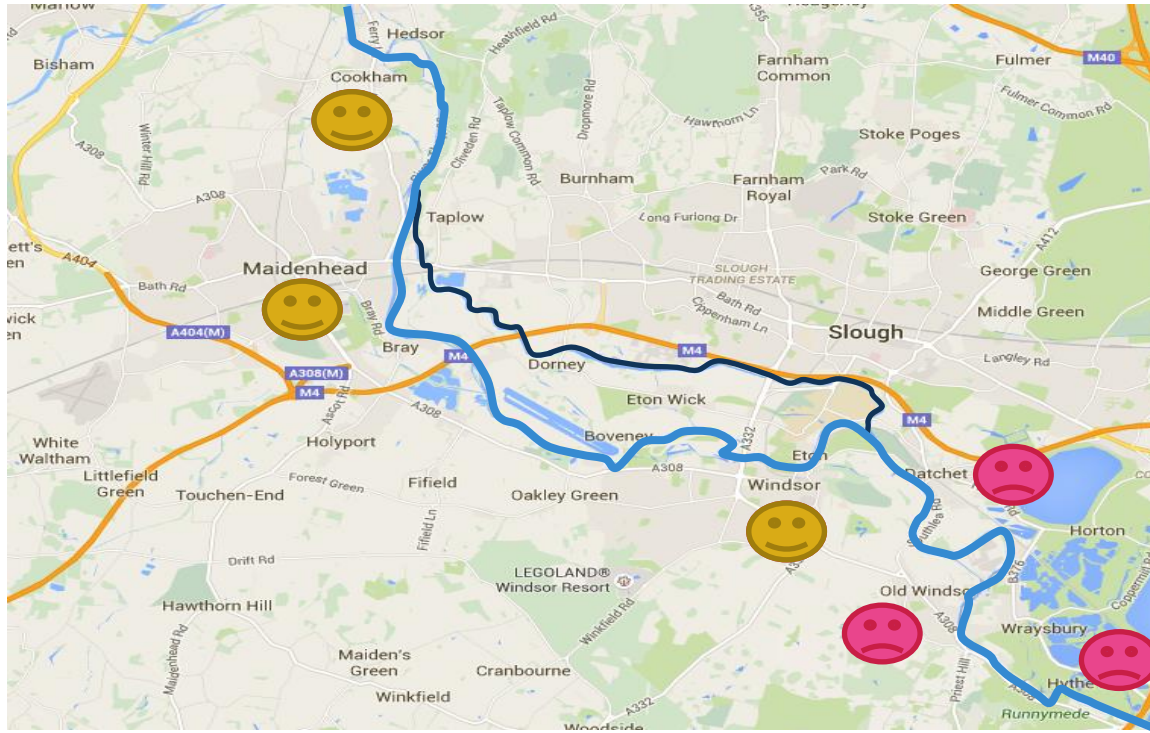
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https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411182/Cost_estimation_for_household_flood_resistance_and_resilience_measures.pdf



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Decision time...



Option 1: Divert river

- **£160m** cost to government

- £20m net **cost** + social benefit

Actual benefit:

Option 2: Flood proof homes
£230m

- **£60m** cost to government

Cost of extension:
£256m

- £80m net **benefit** + social cost



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Limited resources

- 8 to 1 ratio of return on flood spending



Flood Defences – EU directive



Preliminary flood risk assessment

Flood risk maps for these zones

Flood risk management plans:

Prevention, protection and preparedness

Overview report based on members' flood risk management plans



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Netherlands

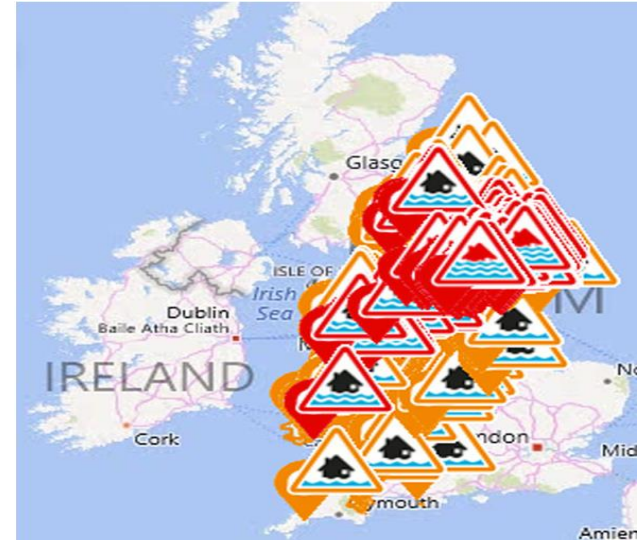
- Tens of billions of euros over 40 years
- €1bn per year maintenance





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Outlook



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Funding increase

- Budget 2016 – IPT increased from 9.5% to 10%



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National flood resilience review

Modelling

Resilience of
infrastructure

Temporary
defences

Investment
strategy



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Flood Re transition plan



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Shhhhhh (climate change)



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Questions

Comments



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Premium by council tax band

Cover Type	Property Council Tax Band								
		A	B	C	D	E	F	G	H
	Wales:	A/B/C		D	E	F	G	H	I
Buildings only		£132	£132	£148	£168	£199	£260	£334	£800
Contents only		£78	£78	£98	£108	£131	£148	£206	£400
Buildings and Contents combined		£210	£210	£246	£276	£330	£408	£540	£1,200



How to flood protect a home

- Flood-proof doors £750 – 2,500+ (or demountable door guards £2,380)
- Airbrick covers £180 – 1,680
- Resilient plaster £6,300 – 8,200
- Concrete/sealed floors £7,600 – 12,500
- Raise appliances £700 – 1,100
- Periphery wall/free standing barriers £5,000 - 12,000
- Additional external layer (render, bricks etc) £2,500 – 4,000 per property
- Automatic door guards £8,000
- Sump and pump £50 – 2,500
- Raise floor levels £28,200 – 44,700



How to flood protect a home

Property type	Option	Description	Low cost	Medium cost	High cost
Residential	Standard resilience	Resilient plaster, removable doors, internal wall rendering, resilient kitchen, raised electrics and appliances	£6,210	£7,830	£9,450
	Premium resilience	Concrete/sealed floors, resilient plaster, removable doors, internal wall rendering, resilient kitchen, raised electrics and appliances	£9,620	£11,870	£14,130

