

Coastal Squeeze: A research agenda to support policy transformation

NCCARF Gold Coast 28th June 2010

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Talk structure

- Why coastal squeeze is a problem
- A research agenda to address coastal squeeze
- Dimensions of an effective retreat policy
- Research Questions

The Problem

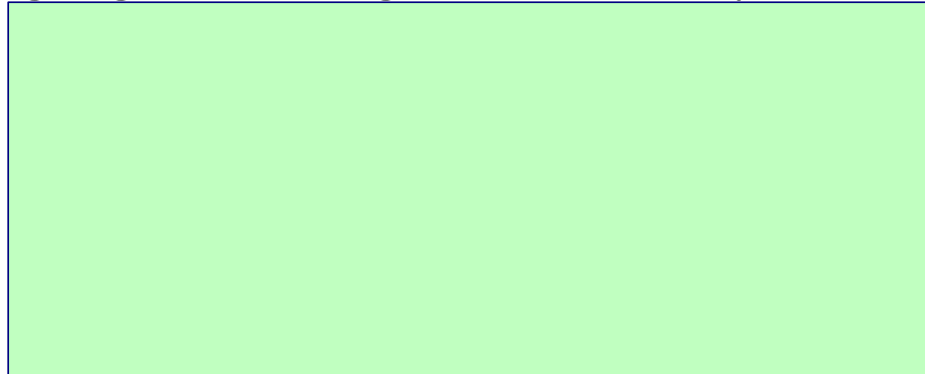
- Retreat has benefits but is unlikely...
- Private investment decisions fail to consider public good impacts
 - People build houses in place where, as seas rise, we may want public space for ecosystems and beaches
- System wide status quo bias will prevent retreat
 - Individual
 - Market
 - Planning
 - Legal
 - Political

A Research Agenda for Coastal Squeeze I

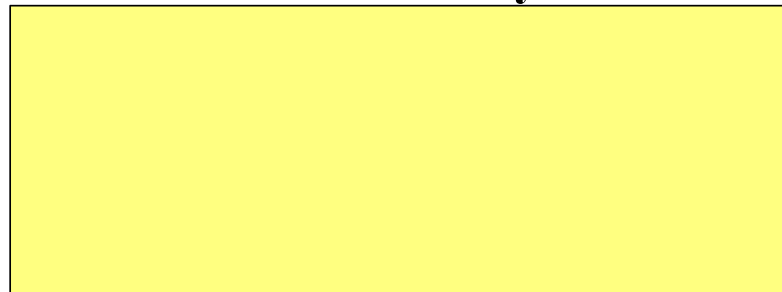
Social-Ecological Systems Perspective



Designing and Refining Alternative Policy Mechanisms



Trials of Alternative Policy Mechanisms



Resilience Theory

Public Choice Theory

Social-Ecological Systems Perspective

Identifying barriers and pathways to change

Strategies for navigating multi scale social process

Designing and Refining Alternative Policy Mechanisms

Trials of Alternative Policy Mechanisms

Social- Ecological Systems Perspective

- Incentives that strengthen as threshold are approached
- Allow for uncertainties: rules that change with circumstances
- Align private benefits with public costs across possible futures
- Institutionalise catastrophes as opportunities for change, not signals to rebuild.

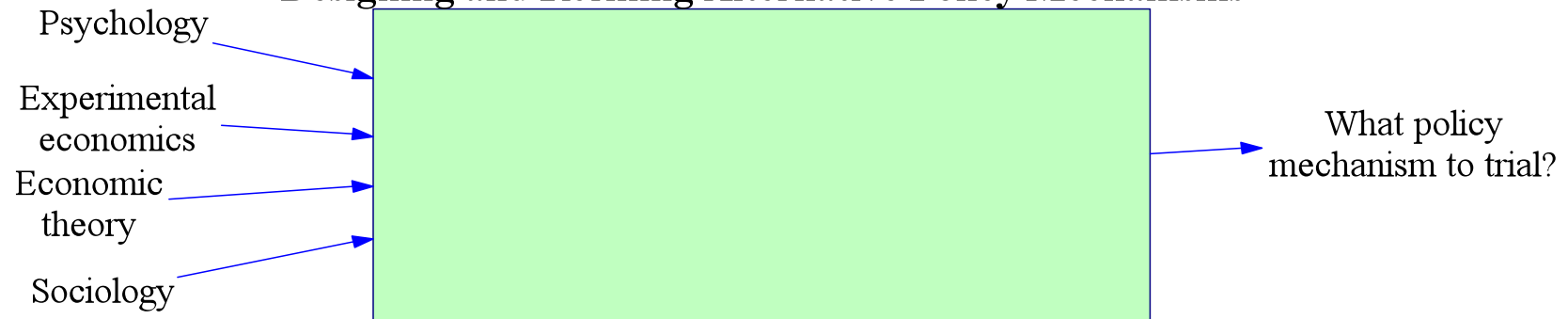
Abel et al (2010) Sea level rise, coastal development and resilience: an analytical framework and case study

A multidisciplinary research agenda

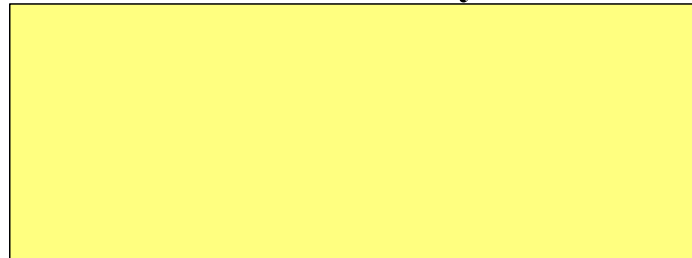
Social-Ecological Systems Perspective



Designing and Refining Alternative Policy Mechanisms

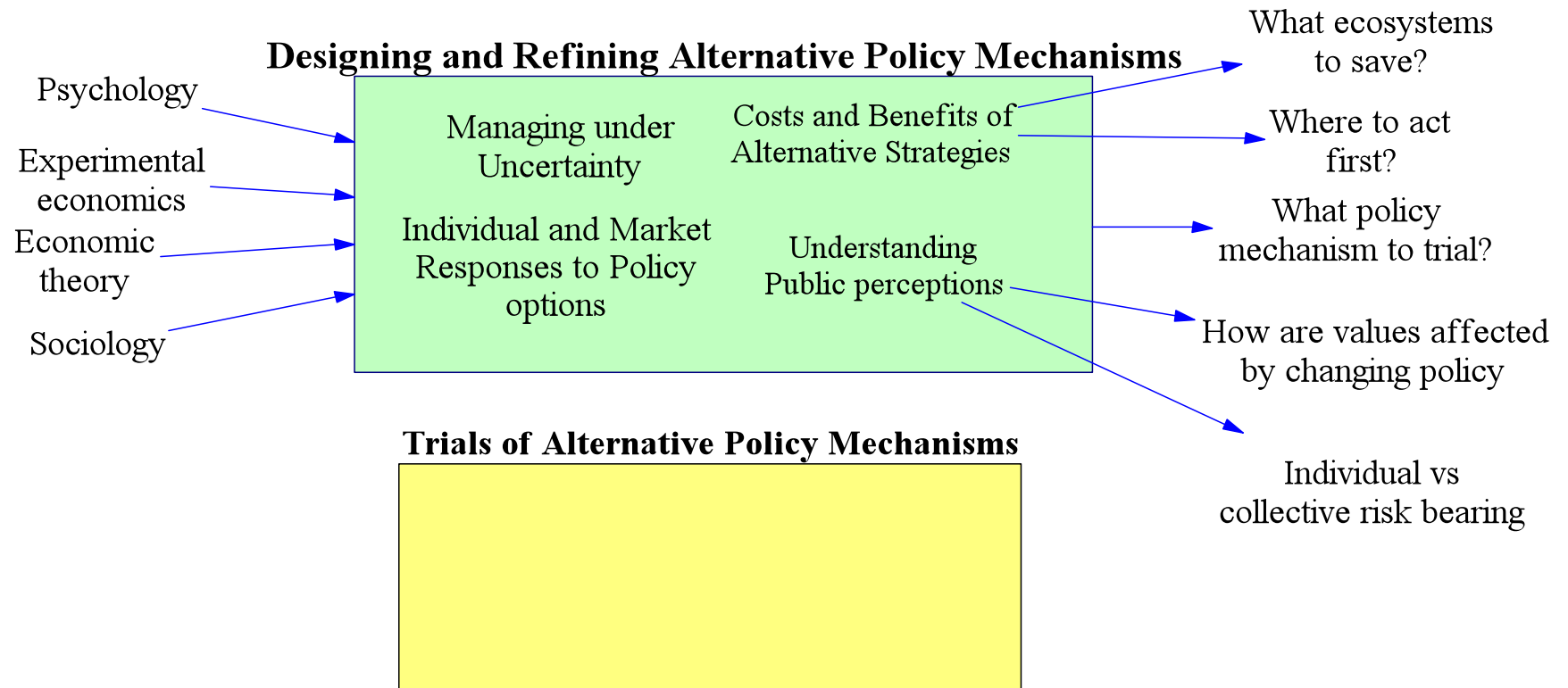


Trials of Alternative Policy Mechanisms



A multidisciplinary research agenda

Social-Ecological Systems Perspective



Issues

&

options

- Dynamic land use
 - Private investment
 - long time frame
 - risk allocation
 - Effective expression of public values for coastal landscapes
 - Enable coordinated abandonment
 - Equity
 - Political acceptability
- Reserves and/or retreat
 - Fixed time or conditional lease?
 - Regulate or price?
 - Eg buy back fund
 - Body corporate or infrastructure fees?
 - Bonds / long term insurance

Scoping survey

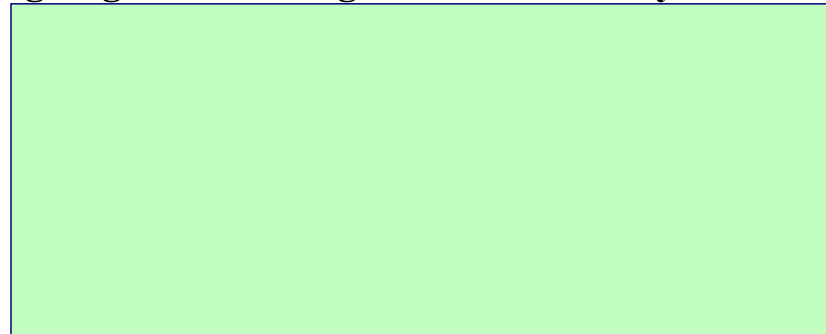
- How people think about:
 - Risk
 - Long time frames
 - The environment
 - Climate change
 - Land ownership
 - Government policy
 - Private public roles and responsibility
- New policy mechanisms

Trials

Social-Ecological Systems Perspective

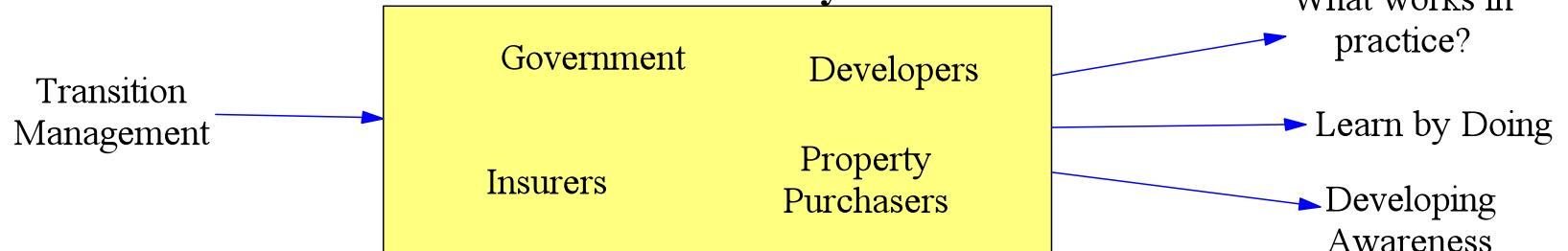


Designing and Refining Alternative Policy Mechanisms



What policy mechanism to trial?

Trials of Alternative Policy Mechanisms



Summary

....a research agenda to address coastal squeeze:

- Multiple strategies and options for addressing coastal squeeze
 - Match place to approach
- Integrated, multidiscipline research focused on the choice of policy mechanism
- Small-scale real-world trials

Need to understand how people will respond to different policy options

Research Questions:

- Will people disinvest optimally under different incentive schemes (eg conditional occupancy, fixed term lease)?
- Will markets for coastal property behave well in face of uncertain inundation?
- What determines if people will accept conditions on land use?
- How will different compensation schemes affect behaviour?

www.csiro.au

Rising Sea Levels & Retreat Schemes A Nation-wide Survey

NCCARF Gold Coast 28th June 2010

**Anthony Ryan, Russell Gorddard, Nick Abel,
Anne Leitch & Kim Alexander**

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1. Method

2. Results

3. Conclusions

Method

Method – Survey Administration & Recruitment

Survey on Housing and Sea Level Rise

- Assessed perceptions about (i) sea level rise (ii) coastal property purchase incentives and (iii) a retreat scheme
- Administered online over 3 week period

Participant Recruitment

- Australia Wide
- Newspaper and Radio Campaign
- Google ads

[CSIRO Survey](#)

Australian Coastal Survey
on Property & Rising Sea Levels
www.cse.csiro.au/coastal-survey

[CSIRO Survey](#)

Interested in Coastal Property?
Thinking about sea level rise?
www.cse.csiro.au/coastal-survey

Questionnaire Outline - Participants

518 participants completed survey

5 item sea level rise risk scale identified 3 groups

Sceptics Group

- 264 not concerned about sea level rise

Unsure Group:

- 81 unsure as to whether seas levels will rise

Concerned Group:

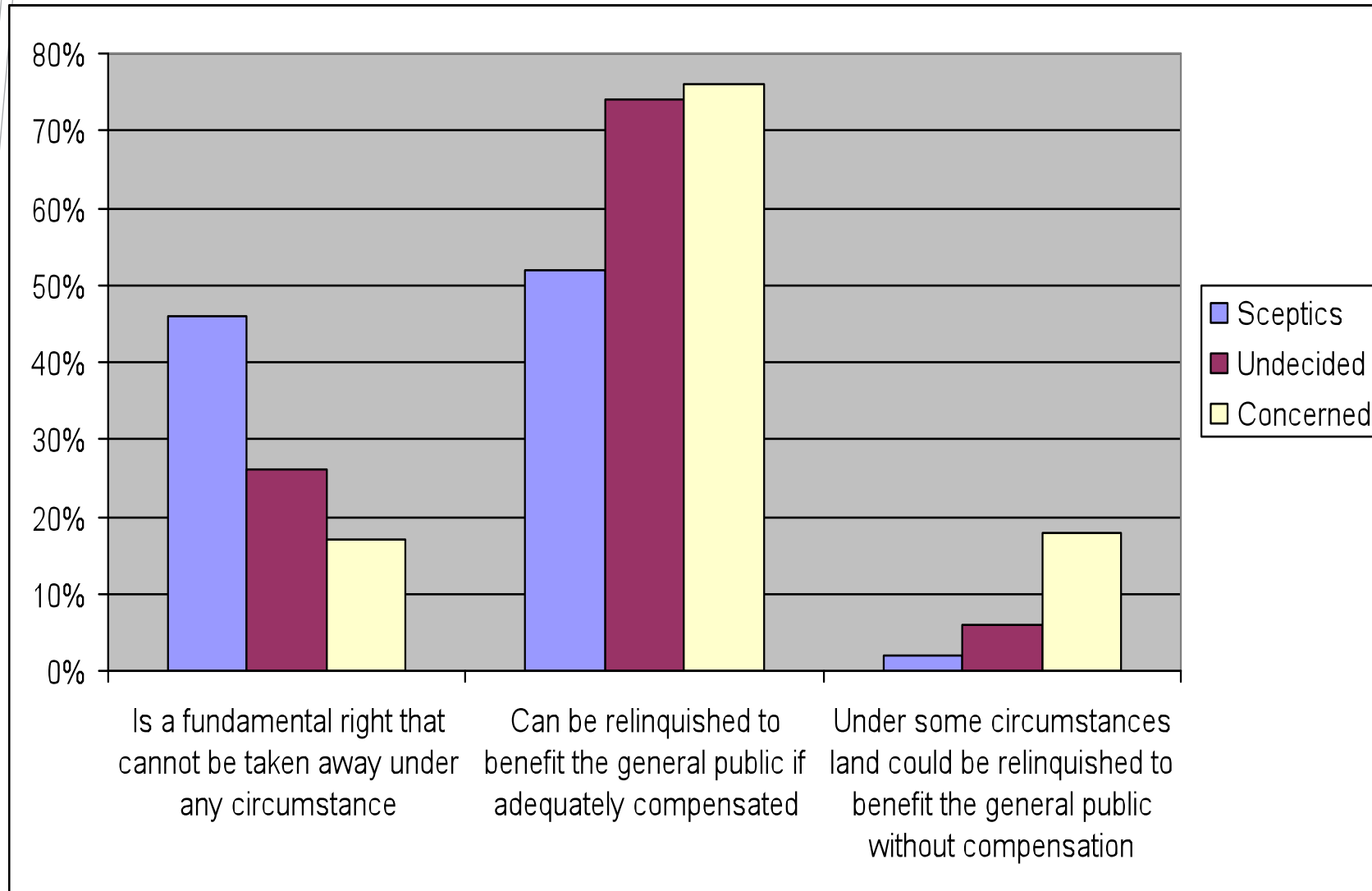
- 173 concerned about sea level rise

Upcoming analysis compares the positions of these 3 groups

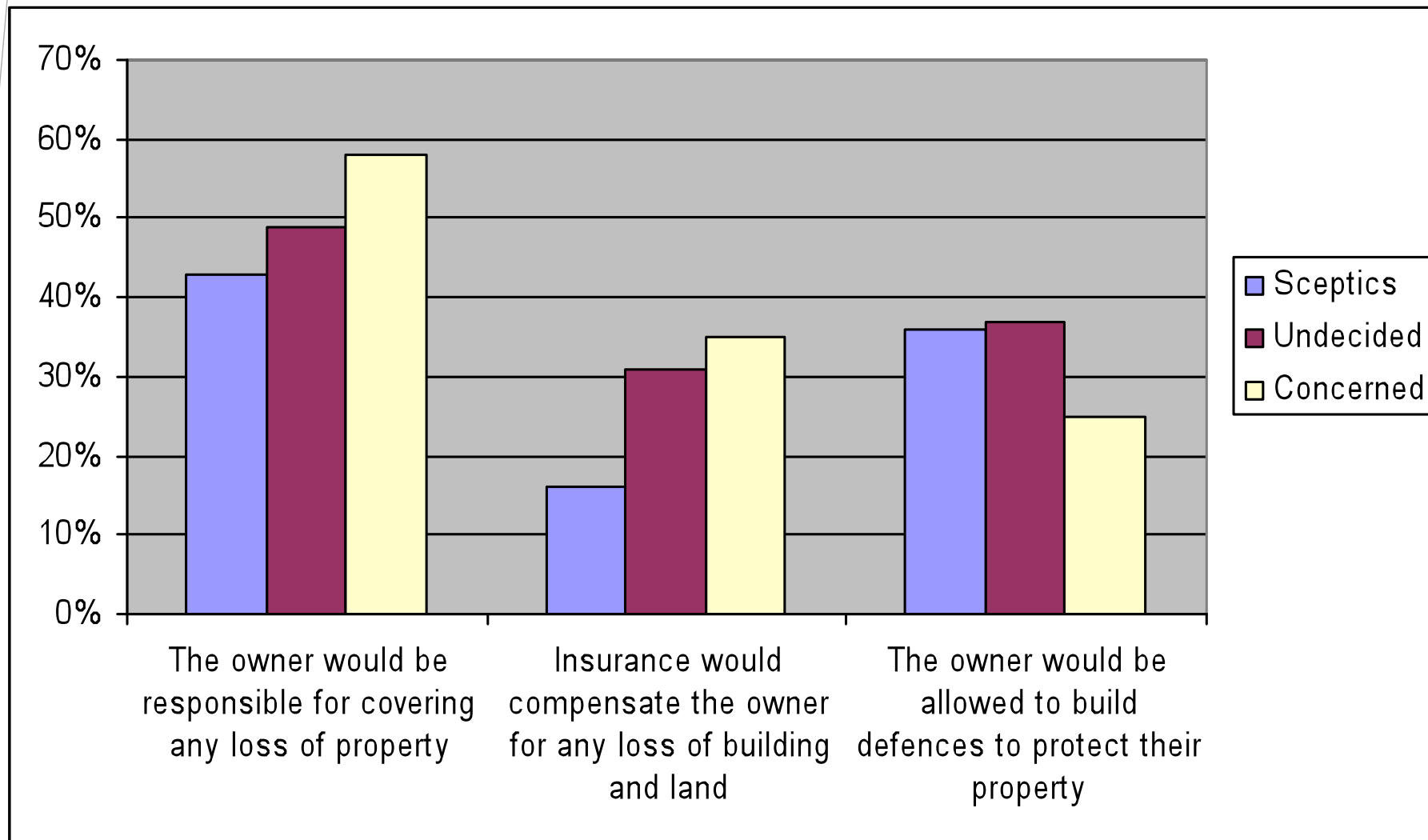
- While sceptics are over-represented this is a group that is important to understand when developing policy

Results

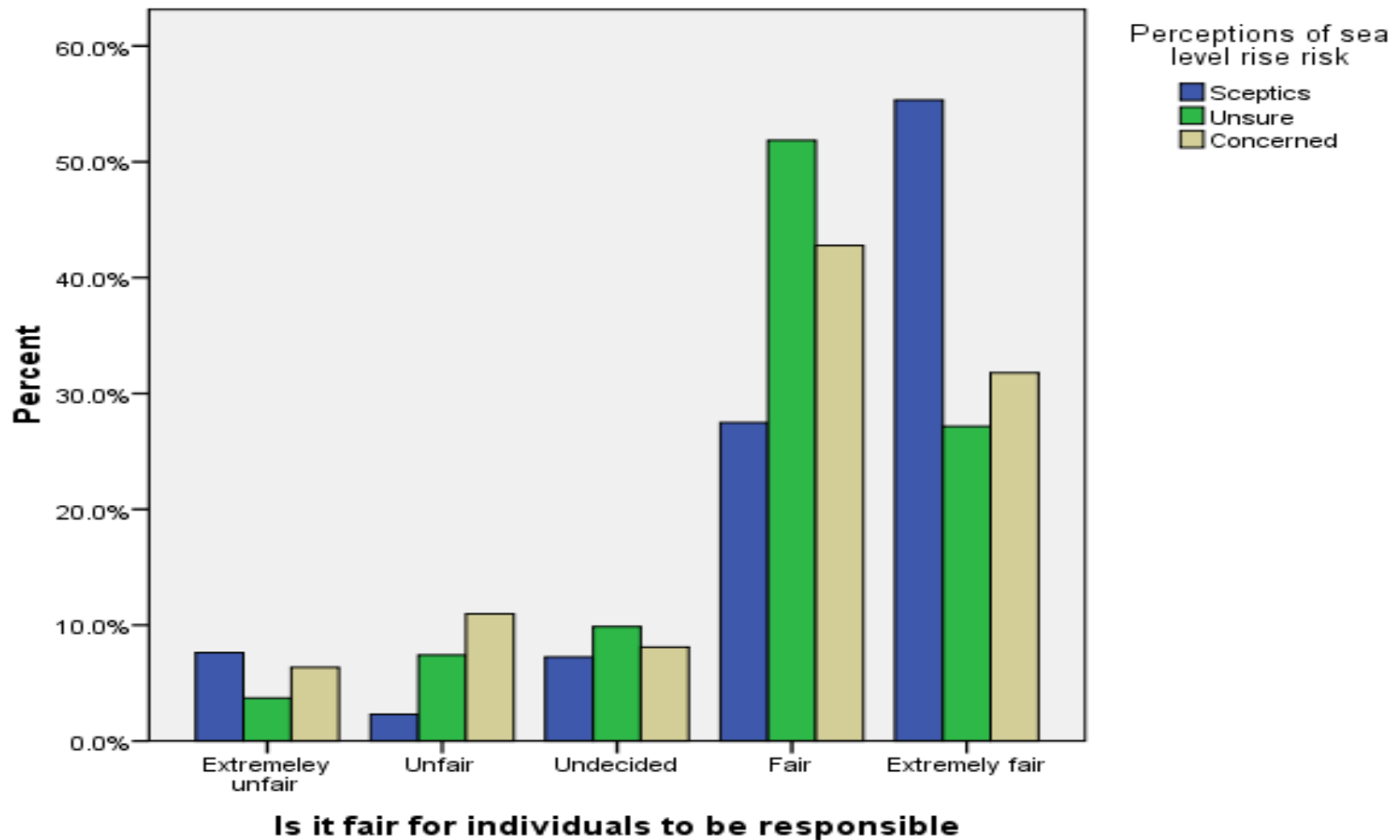
Results – When you purchase a residential property, do you believe that your right to the land:



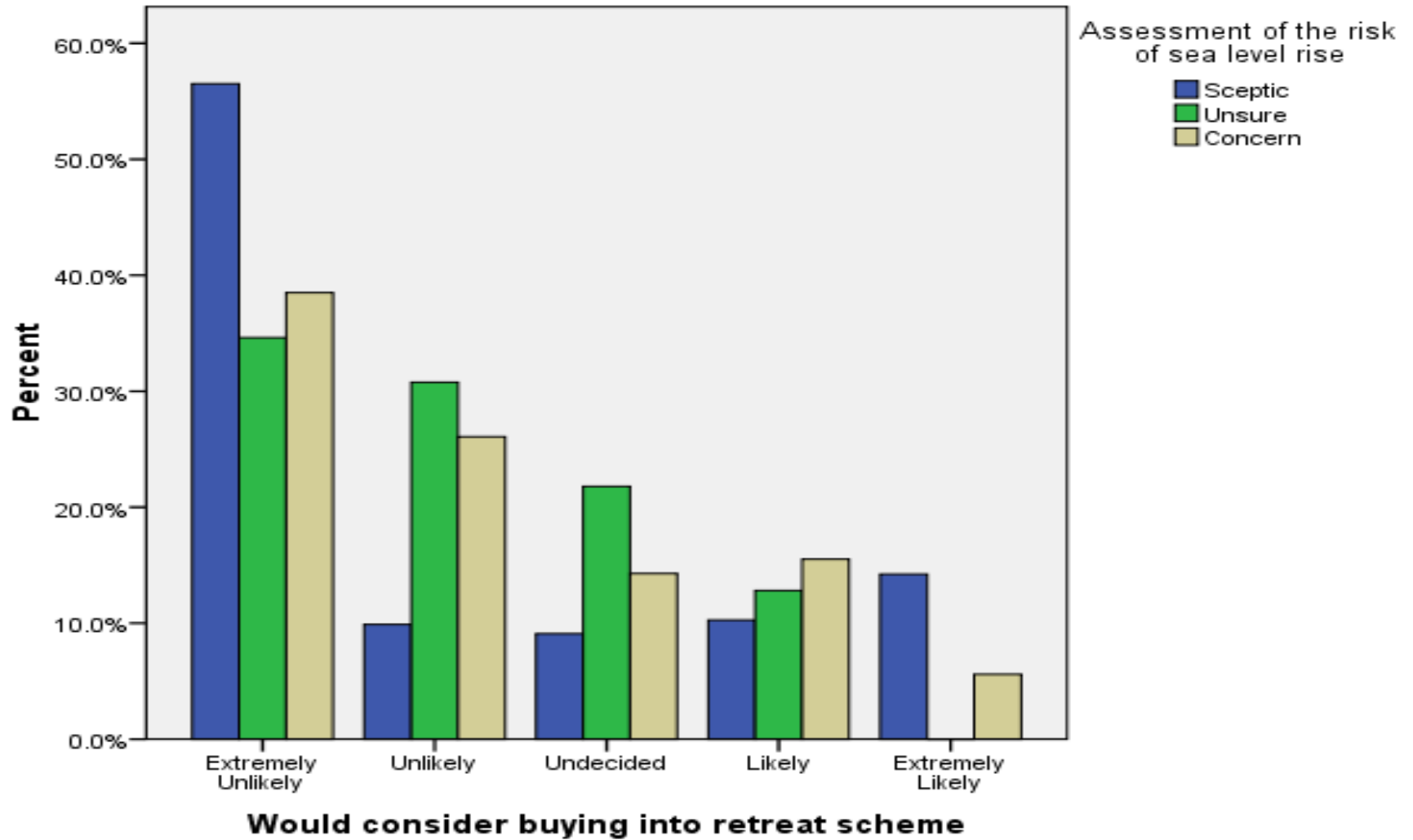
Results – If sea level rise threatens a large number of coastal properties in the future, my expectation is that:



Results – Is it fair for individuals to be responsible for judging the risks of rising seas when investing in property?



Results — If you were planning to buy a property near the coast, would you consider buying a property with a Retreat scheme?



Who is interested in Retreat Scheme?

Sceptics Group: Will profit from a non-event

Participant 1 “It would be cheaper yet be at absolutely no risk from rising sea levels”

Participant 2 “It won't happen and the conditional rights clause will make the property cheaper”

Concerned Group: Heavily Discount Future

Participant A “I won't be here in 50 years - and if I loose money I realise and understand it is my heirs loss”

Participant B “If still alive, I will likely be in a nursing home in 50 years. If the price is right, I could enjoy the next 20+ years living with ocean views and breezes”

Results - Reasons for not being interested in Retreat Scheme

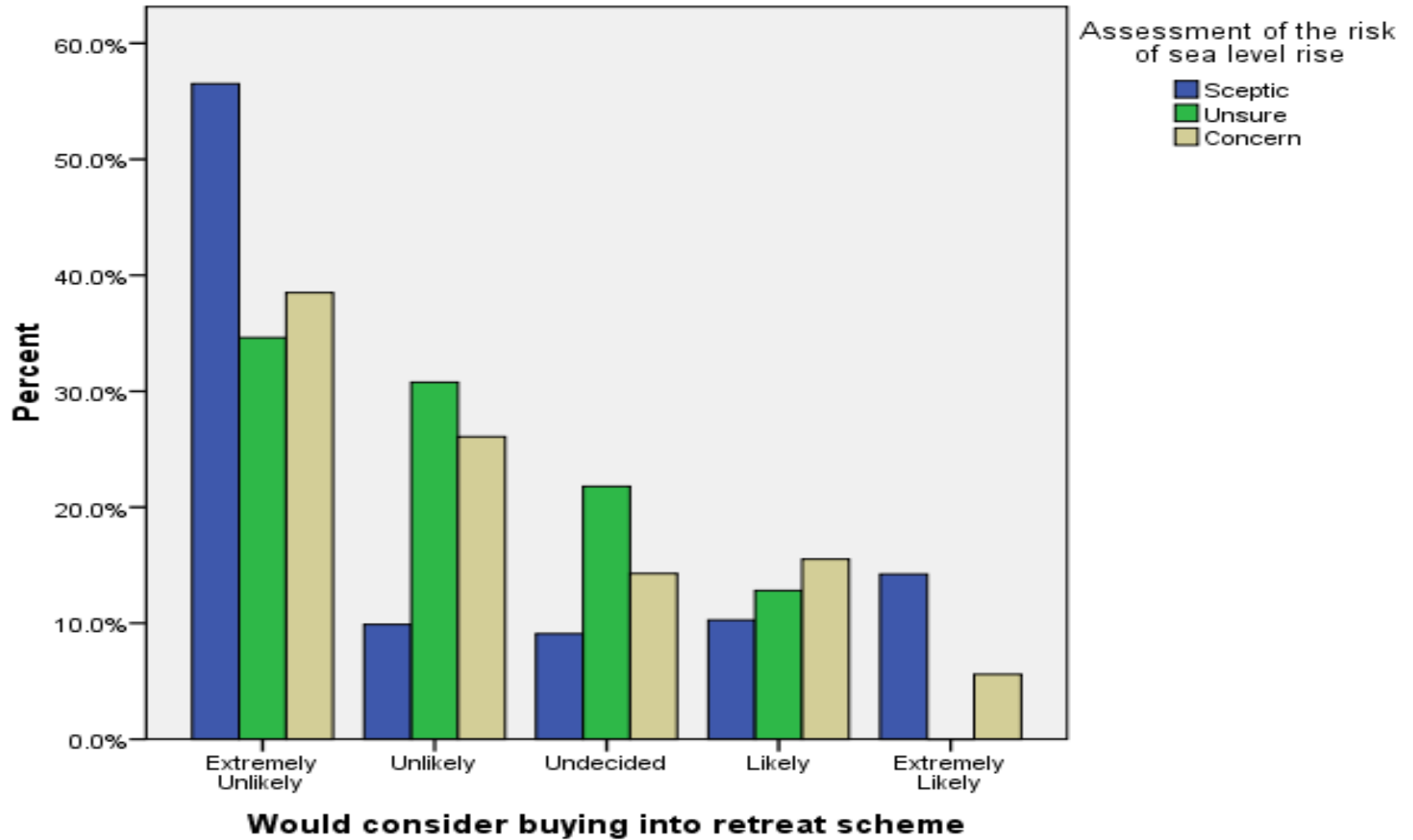
Political

- Don't believe sea levels will rise
- Don't believe should build in areas at risk
- Against rights
- Don't want to extend government powers

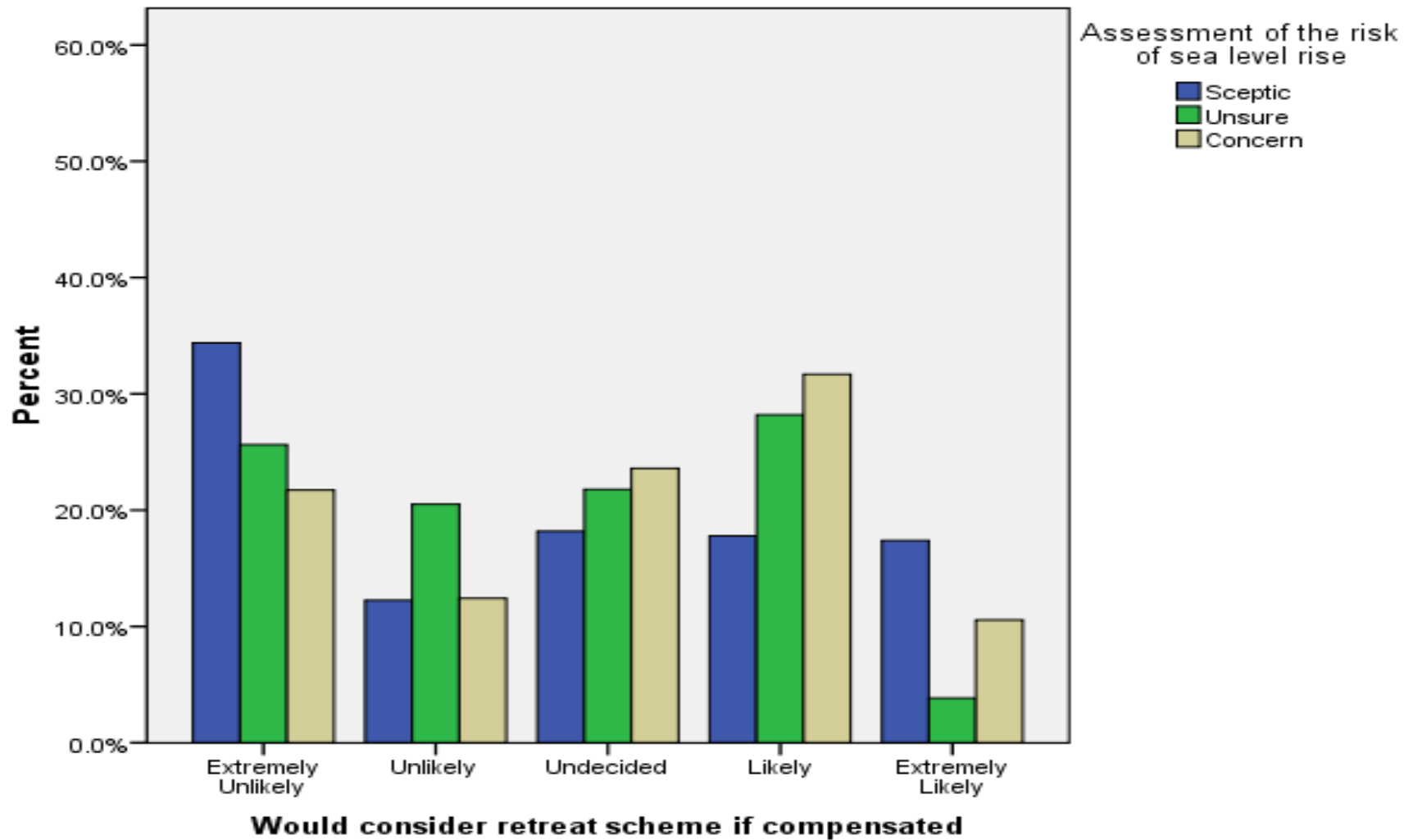
Personal

- Don't want to live near sea
- Poor long-term investment
- Investment too big
- Uncertainty
- Want more information about Retreat Scheme

Results — If you were planning to buy a property near the coast, would you consider buying a property with a Retreat scheme?



Results — If you were to be compensated for the value of the surrendered land would you consider buying a property with a Retreat Scheme?



Conclusions

Conclusions

Retreat policies are untested

Issues around sovereign risk and governments acting in a strategic manner

Most people think it is fair for the individual to judge SLR risk when purchasing property

Need to know more about societal groups and how they will respond to different policy options

Workable retreat schemes will probably require some form of compensation

To do next

From current data set

- Examine perceptions of risk and uncertainty
- Examine motivations to participate in a retreat scheme

Future Research: Examine policy options regarding

- Compensation/ Insurance options
- Motivations for investing in a risky asset
- Retreat scheme rules (who decides when to retreat, retreat timeframe, various land rights options)
- Examine barriers to people pro-actively retreating if SLR occurs
- Are there any institutional designs which will not evoke a strong fear that governments are increasing power
- Incentives to prevent owners protecting properties

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Thank you

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