



Llywodraeth Cymru
Welsh Government

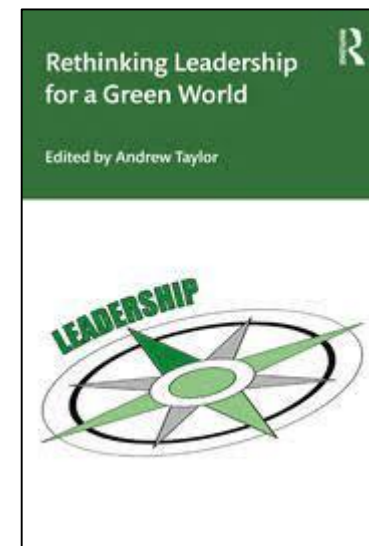
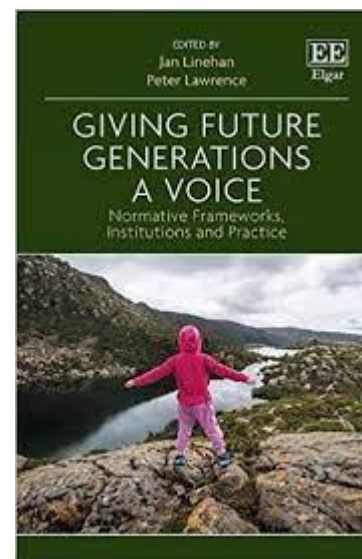


Lifeboats



School of Geography
and Planning

Ysgol Daearyddiaeth
a Chynllunio

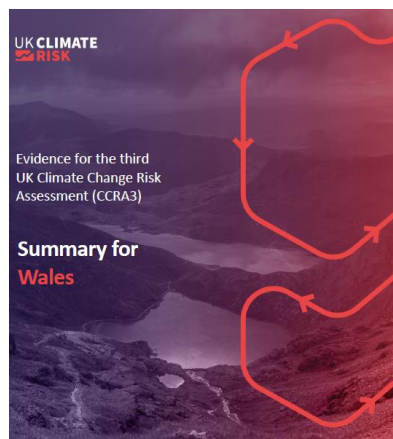


Pembrokeshire Public Services Board
Bwrdd Gwasanaethau Cyhoeddus Sir Benfro



Reflections on Local Climate Risk Assessments – Dr. Alan Netherwood

Climate Change Risk Assessment 3 – UK and Wales



modelling and
'science' is
already done for
you

task: need to
interpret risks in
locality, service
or business
context

not about the
'issue'

but the *response*
to the issue

proportionate
approach to
evidence
gathering

| NATURAL ENVIRONMENT & ASSETS | INFRASTRUCTURE | HEALTH COMMUNITIES & BUILT ENVIRONMENT |
|---|--|--|
| N1. Terrestrial species and habitats | I1. Infrastructure networks (water, energy, transport ICT) | H1. Health and wellbeing (temperatures) |
| N2. Terrestrial species and habitats (INNS) | I2. Infrastructure services (riverine) | H3. People, communities and buildings (flooding) |
| N4. Soils | I3. Infrastructure services (coastal) | H4. Viability of coastal communities (sea level) |
| N7. Agriculture | I4. Bridges and pipelines | H5. Building fabric |
| N8. Forestry | I5. Transport networks | H7. Health and wellbeing (air quality) |
| N10. Aquifers and agricultural land | I6. Hydroelectric generation | H8. Health (vector borne disease) |
| N11. Freshwater species and habitats | I7. Subterranean and surface infrastructure | H9. Food safety and food security |
| N12. Freshwater species and habitats (INNS) | I8. Public water supplies | H10. Health (house water supply) |
| N14. Marine species, habitats and fisheries | I9. Energy generation | H11. Cultural heritage |
| N16. Marine species and habitats | I10. Energy | H12. Health and social care delivery |
| N5. Natural carbon stores, carbon sequestration | I11. Offshore infrastructure | H13. Education and prison services |
| N6. Agricultural and forestry productivity | I12. Transport | Opportunities |
| N17. Coastal species and habitats | I13. Digital | H2. Health and wellbeing (high temperatures) |
| N18. Landscape character | BUSINESS & INDUSTRY | H6. Household energy demand |
| Opportunities | B1. Flooding of business sites | INTERNATIONAL DIMENSIONS |
| N3. New species | B2. Coastal business locations and infrastructure | ID1. Food availability, safety, and quality |
| N9. Agricultural and forestry productivity | B3. Business production processes | ID3. Migration |
| N13. Freshwater species and habitats | B4. Business access to finance, investment, insurance | ID4. The UK's international interests and responsibilities |
| N15. Marine species, habitats and fisheries | B5. Reduced employee productivity in businesses | ID5. Changes to international governance affecting the UK |
| | B6. Supply chains and distribution networks | ID7. International trade routes |
| | B7. Changes in demand for goods and services | ID8. Risk to the UK Financial Sector |
| | | ID9. Risks to Public Health from Overseas |
| | Priority risks for service | ID10. Risk multiplication to the UK |
| | Broader risks impacting on service | Opportunities |
| | Risks from support 'systems' | ID2. UK food availability and exports |
| | | ID6. Increased trade for the UK |

CCRA3 can help us to
identify broad risks to focus
on and interpret at service
and locality level

Key points:

climate risk
assessment is a
means to an end

not the end itself

to identify

- strengths
- gaps,
- actions to address gaps
- responsibilities
- adaptation delivery
- reorganising resources in institutions

the risk assessment
needs to be 'velcroed'
into delivery systems

resulting in specific
actions to build climate
resilience

to develop a **co-ordinated strategic approach** to address climate risk by agencies, authorities and community groups through a county-wide **Climate Adaptation Strategy**.



Strategy and Protocol Report available:
<https://www.pembrokeshirecoastalforum.org.uk/climate-adaptation-strategy/>

61 climate risks from CCRA3 explored

39 priorities: ranking; specifying

24 actions which need leading & resourcing

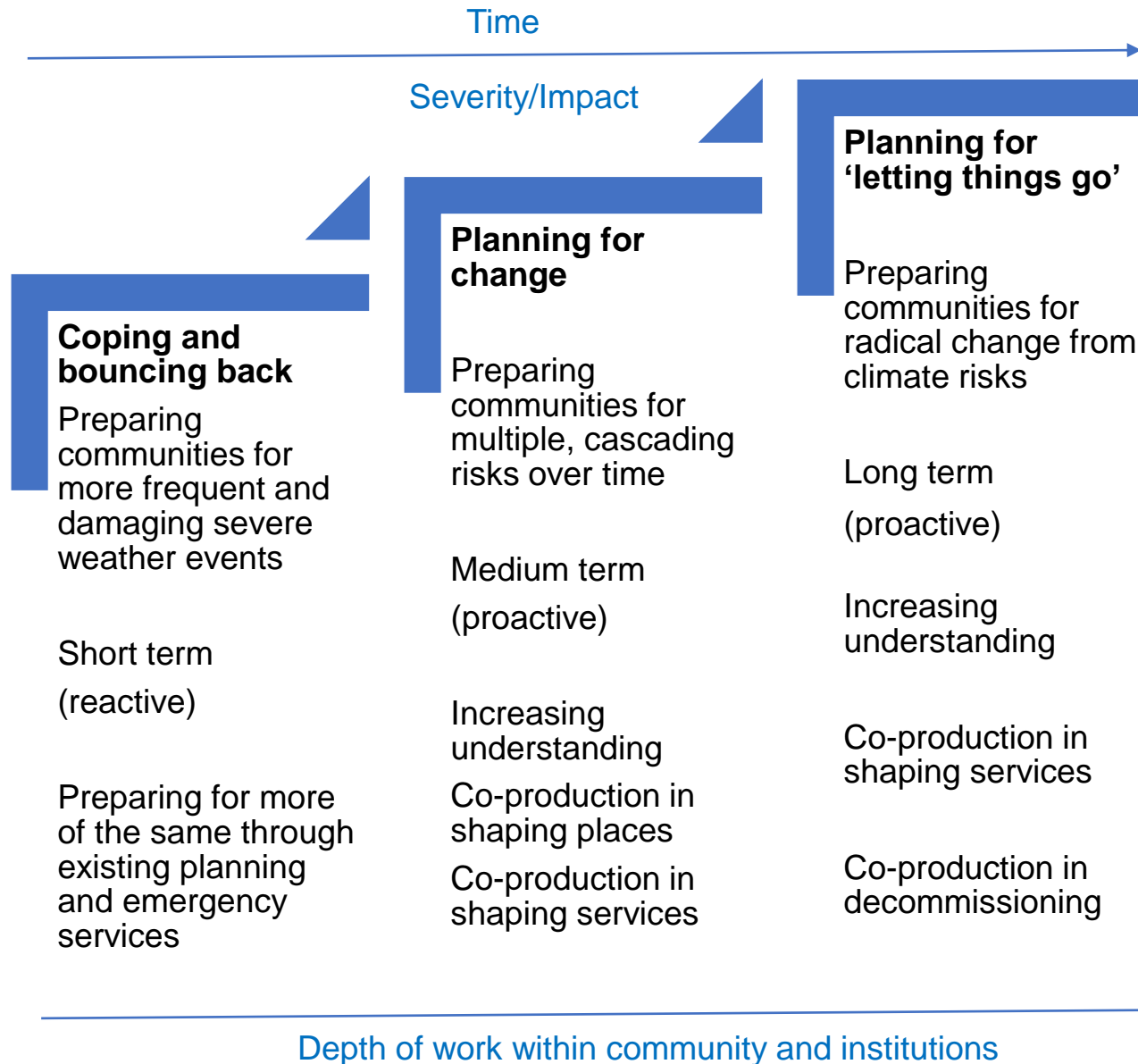
184 individuals
30+ organisations
5 workshops
4 surgeries
5 reports
8 outreach 1-1s
consultation
strategy production
PSB liaison
CRF funded

Key points:

Product of the collective views of the PSB partners own officers and local experts about where the gaps are and the adaptation needed.

Not 'ought to's' and 'should do's' but

specific actions to build climate resilience



Key issues

A protocol will need to work for different communities across Pembrokeshire with

- unique circumstances and vulnerabilities
- over time
- through a process of change

**Public Health Network
Cymru: Protecting health
and wellbeing in the climate
crisis: local climate risk
assessments 21.11.23**

**Reflections on Local
Climate Risk
Assessments – Dr. Alan
Netherwood**

**Use of data to think
about ‘place’**

Key issue

We already know
‘pretty’ much where

but what combination
of risks will occur

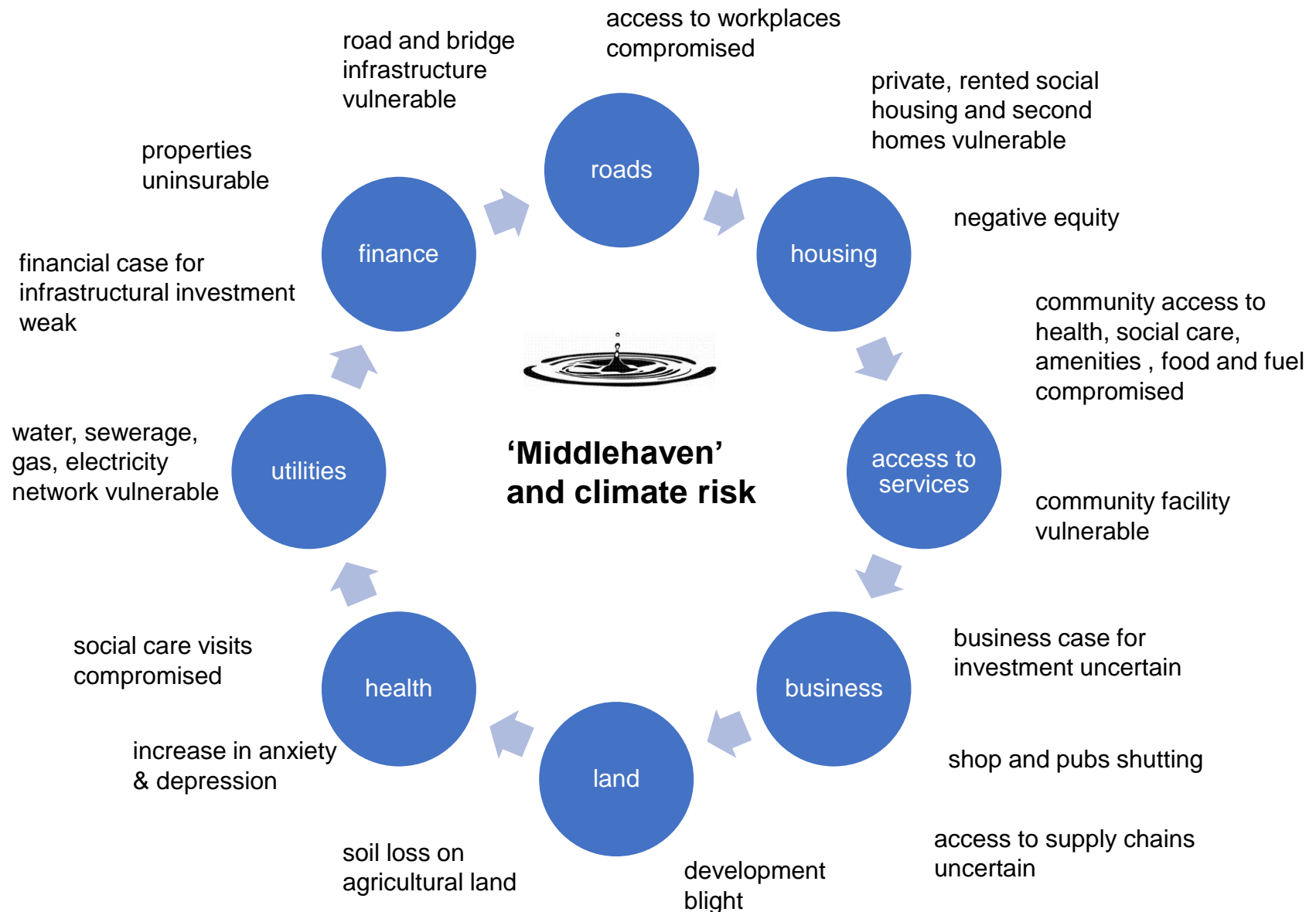
over time

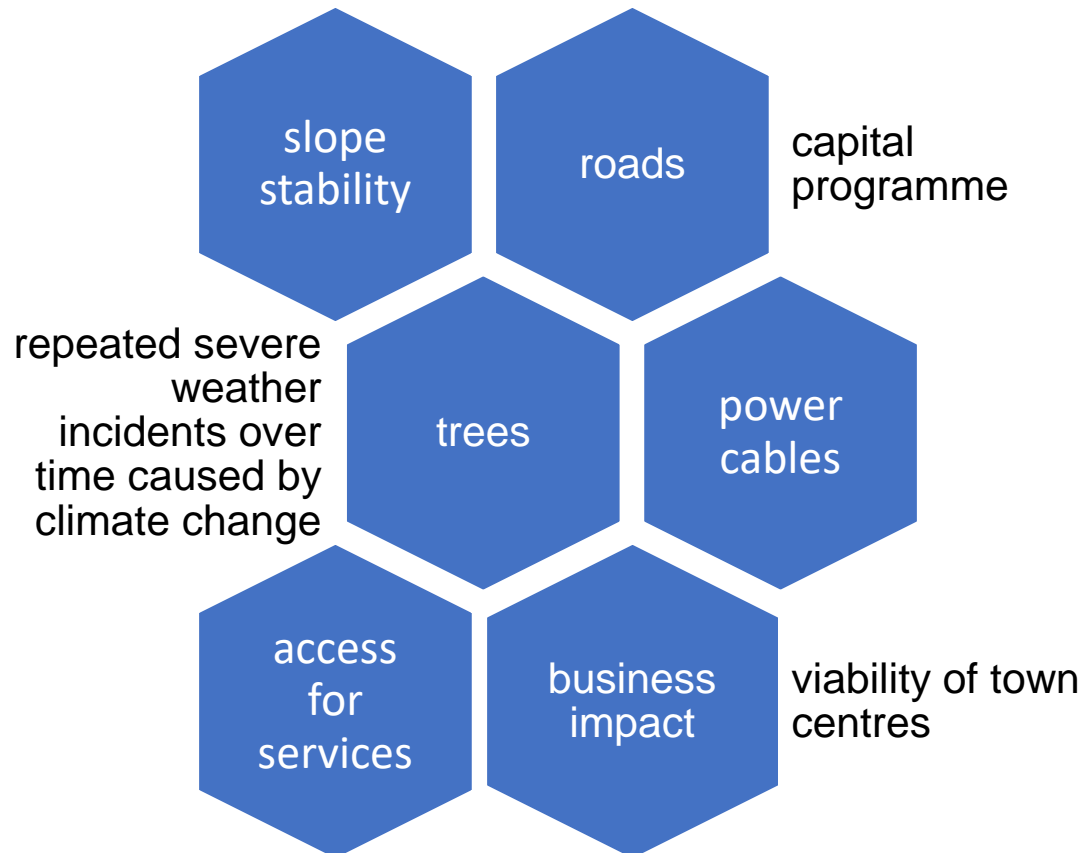
in each place?



| Community | Surface | Tidal | Fluvial | At Risk | PCNP CCMA | Shoreline post 2025 - 2055 |
|------------------------------------|---------|-------|---------|---------|--------------|---|
| Amroth | | | | | | No active intervention post 2055 |
| Angle | | 6 | | | | |
| Broadhaven S & C | | | | | | Managed retreat post 2055 |
| Broadhaven North | | | | | | Managed retreat 2025-55 then no active intervention |
| Cilgerran | | | 9 | | | |
| Crymych | | | 1 | | | |
| Cym yr Eglws | | | | | | Hold the Line and Nature Based Solutions |
| Dale | | 9 | | | | |
| Felindre Farchog | | | 7 | | | |
| Fishguard | 9 | 7 | 5 | 4 | | |
| Fishguard Harbour | | | | | | Hold the Line and Nature Based Solutions |
| Fishguard Lower | | | | | | Hold the Line and Nature Based Solutions |
| The Garn | | | | | | |
| Gelliswick Bay | | | | | | |
| Goodwick | 6 | 2 | | | | Managed retreat (Parrog) post 2025. |
| Goodwick Lower | | | | | | Managed retreat post 2055 |
| Haroldston Hill | | | | | | Managed retreat post 2055 |
| Haverfordwest | 5 | 5 | 3 | 1 | | |
| Kilgetty | | | 4 | | | |
| Little Haven | | | | | | Managed retreat post 2055 |
| Llawhaden | | | 10 | | | |
| Lower Solva | | | | | | Managed retreat post 2055 |
| Lydstep | 7 | | | | | No active intervention post 2025 |
| Martello, Llanreath Cleddau Bridge | | | | | | Hold the Line and Nature Based Solutions |
| Merlin's Bridge | 10 | | | | | |
| Milford Haven | | 10 | 6 | | | Hold the Line and Nature Based Solutions |
| Narbeth | 8 | | | | | |
| Neyland | | | | | | Hold the Line and Nature Based Solutions |
| Nolton Haven | | | | | | Managed retreat post 2025 |
| Newgale | | | | | | Managed retreat 2025-2055 then no active intervention |
| Newport | 4 | 8 | | | | Parrog managed retreat post 2055 |
| Newport Sands | | | | | | Managed retreat 2025-2055 then no active intervention |
| Pembroke | | 3 | | 2 | | |
| Pembroke Dock | 2 | 4 | | | | |
| Porth Clais Inner | | | | | | Hold the Line and Nature Based Solutions |
| Porth Clais Outer | | | | | | No active intervention post 2025 |
| Porth Gain | | | | | | Hold the Line and Nature Based Solutions |
| Pwllgwaelod Bay | | | | | | No active intervention post 2025 |
| Saundersfoot | | | 8 | | | Managed retreat post 2055 |
| Solva Harbour | | | | | | Hold the Line and Nature Based Solutions |
| St. Dogmaels | 3 | | 2 | 5 | | (North) Hold the Line and Nature Based Solutions |
| Tenby | 1 | 1 | | 3 | | North and South Beach Hold the Line and Nature |
| Wisemans Bridge | | | | | | No active intervention post 2025 |
| Whitesands Bay | | | | | | Managed retreat post 2025 |

This data is drawn from NRW data supplied for the Pembrokeshire Well-being Assessment (2022) and PCNP data on coastal change management areas (2018)





Key issues for climate change leadership:

- drawing on internal and external expertise to plan for prevention, risk assessment and response
- creating space for dialogue
- challenging colleagues to integrate into processes and decisions
- Planning for different combinations of climate risks in different localities

Example from WLGA
Climate Leadership
Programme 2022/23

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Lessons from career, commissions and research

multiple layers of risks need to be considered

- risks to **service users** – immediate and cumulative
- risks to **support systems** – infrastructure, utilities, IT, combining in place – impeding services
- risks to **assets and locations** – damage and access
- broader **systemic risks** – service demand, supply chains

providing space and structure to explore *agency to respond*

- localise risks
- sufficiency of response to date
- risk assessment *part of* business case for action
- changes needed to build resilience

20 years of thinking about climate risk

Cardiff
Wales

WLGA Changing Climate Changing Places 2010- 2013
Carmarthenshire
Flintshire
MoD (x sites)

Pembrokeshire
Denbighshire
Climate Ready Gwent (Blaenavon, Monmouth, Goldcliff, Cwm Carn)
Fishguard & Goodwick
Newcastle Emlyn
Rhyl
North–West Swansea (Gorseinon, Gowerton, Pontardulais)
Bluestone
RNLI (280 sites)

Key issues

Inter and intra institutional responses to the risk assessment are key

otherwise...

so what.....

nice to do's but we have no money

we aren't required to do this

'they' ought to.....

'they' should do.....

Governance associated with the risk assessment

- processes
- communicating scale and consequences
- leadership
- resources to respond