

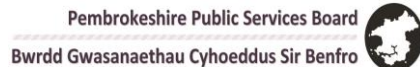
Health Impacts of Climate Change in Wales: Examining the evidence base and identifying future priorities **Dr. Alan Netherwood**



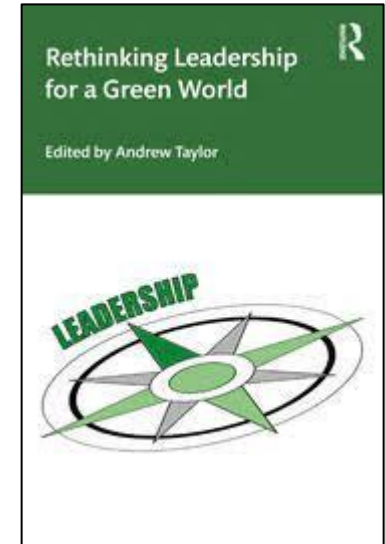
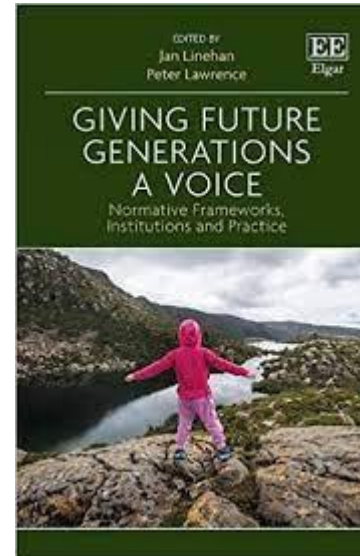
Llywodraeth Cymru
Welsh Government



WcVA
CgGC



School of Geography
and Planning
Ysgol Daearyddiaeth
a Chynllunio



Broad messages on climate risks and adaptation

Climate risks are inevitable and need planning for now



We can expect by mid-century

- warmer and wetter winters
- hotter and drier summers
- high variability of extreme weather
- increase our exposure to weather-related hazards:
- increased frequency and intensity of wildfire.

We can also expect

- increases in average and extreme temperatures, in winter and summer.
- flooding and water scarcity increased coastal flooding and erosion, sea
- temperature rise and ocean acidification.

After 2050, the extent of further climate change will depend on future global emissions of greenhouse gases.

If the world cuts emissions rapidly to Net Zero, there is a good chance of limiting global temperature increase to below 2°C.

If not, we will see higher levels of warming and much more extreme impacts.

See CCRA3: Wales Summary Report

<https://www.ukclimaterisk.org/wp-content/uploads/2021/06/CCRA-Evidence-Report-Wales-Summary-Final.pdf>

Key message

further warming and climate change is already inevitable (due to past emissions)...but...

Key message:

we can reduce severity of change in the future by reducing carbon emissions into the atmosphere = **Decarbonisation**

Key message

we can plan well for future climate risks at a local level = **Climate Adaptation**

CCRA3 contains important evidence for you to regionalise, localise and internalise as an organisation

Key issue: unpreparedness and adaptation gaps UK and Wales-wide



independent review of evidence of climate risks every 5 years – informs government responses

450 people, 150 organisations, policy experts, academics, scientists

evidence report UK and Wales on 61 risks and opportunities from climate change, including to business, infrastructure, housing, the natural environment, our health and risks from the impacts of climate change internationally.

- Wales specific **input into** the UK assessment
- Wales specific summary **drawing from** the UK assessment

commissioned **technical reports**: economy; flooding; agriculture, water; infrastructure; socio-economic; behaviours and others.

accounts for existing strategy, policy, investment and actions

focuses on adaptation gap – what is needed over next 5 years



“ UK ‘strikingly unprepared’ for impacts of climate crisis”

UK Climate Change Committee April 2023

Advice on using CCRA3 climate risk assessment is a means to an endhow you use the data to inform your plans

risk assessments should identify

- strengths
- gaps
- Potential 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



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 (RHD)	I2. Infrastructure services (liveries)	H3. People, communities and buildings (flooding)
N3. 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 (RHS)	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
N9. New species	B2. Coastal business locations and infrastructure	D1. Food availability, safety, and quality
N9. Agricultural and forestry productivity	B3. Business production processes	D3. Migration
N13. Freshwater species and habitats	B4. Business access to finance, investment, insurance	D4. The UK's international interests and responsibilities
N15. Marine species, habitats and fisheries	B5. Reduced employee productivity in businesses	D5. Changes to international governance affecting the UK
	B6. Supply chains and distribution networks	D7. International trade routes
	B7. Changes in demand for goods and services	D8. Risk to the UK Financial Sector
	Priority risks for service	D9. Risks to Public Health from Overseas
	Broader risks impacting on service	D10. Risk multiplication to the UK
	Risks from support 'systems'	Opportunities
		D2. UK food availability and exports
		D6. Increased trade for the UK

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

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

CCRA3 – risks are complex and combine in 'place' and can cascade

Not just red, orange and green!

its more nuanced than that

Climate risk and public services

Planning to deliver services in a *changed* and *changing* climate

managing the consequences of climate impacts and associated risks in communities

planning strategically for a different future climate

integrating climate risks into the way the organisation plans and delivers

place shaping –through regeneration and planning

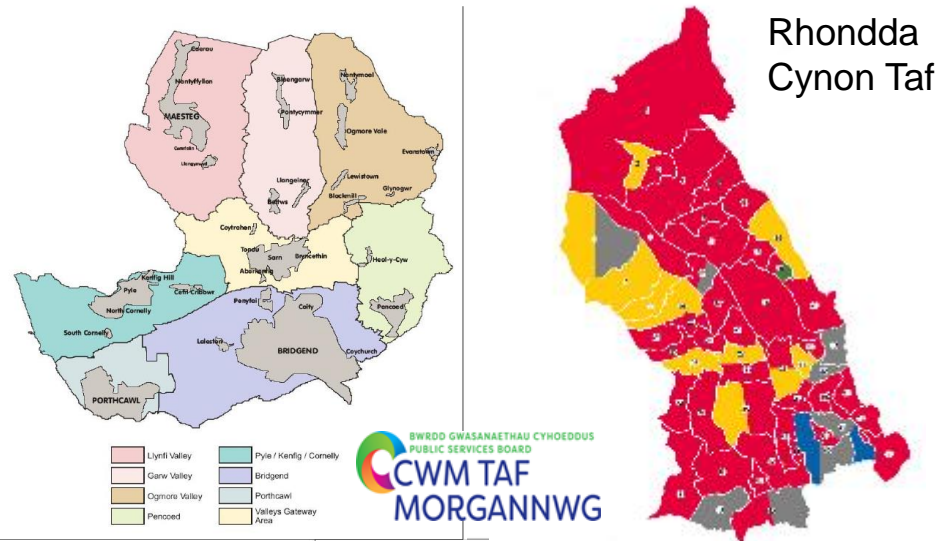
engaging at risk communities – from resilience to existence

operationally in **adapting services** to a new climate

political representation of current and future generations

financially in sound investment in infrastructure

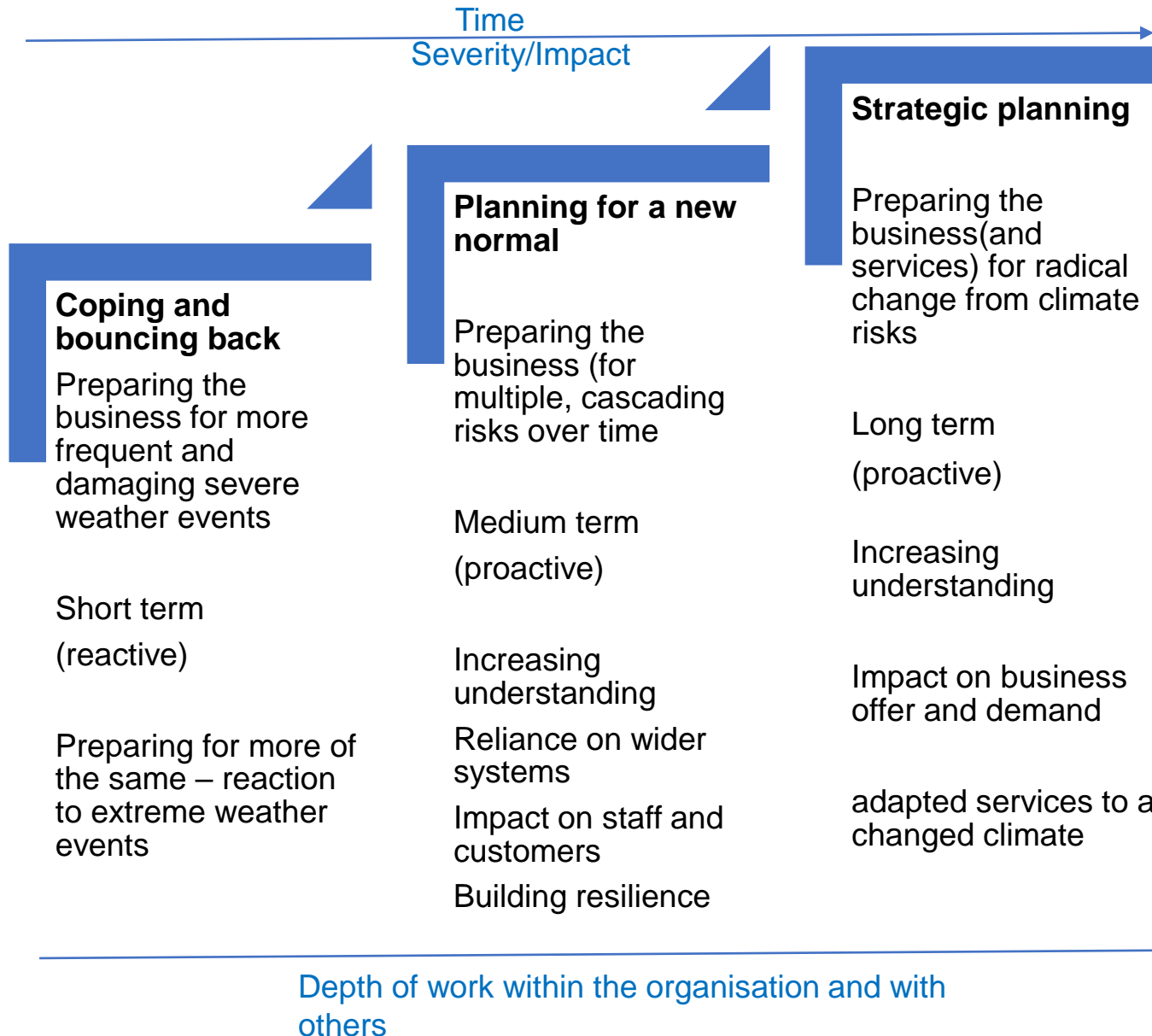
ethically in not ‘kicking the can down the road’ for communities and successors in public service



Bridgend



Climate risk is not about individual severe weather events – its about increased frequency, severity, unpredictability and impact
CCRA3 – risks are complex and combine in ‘place’ and are cumulative



Key issues

Business needs to prepare for:

- business continuity
- product and service redesign
- enhancing emergency response for repeated incidents
- resilience to catastrophic cascading risks

Cwm Taf Morgannwg Climate Change Risk Assessment

Key messages from Climate Change Risk Assessment 3:

Infrastructure – climate risks that frequently emerge at a local level – key issue – what and where in CTM?

Road condition

Slope condition

Bridge condition

Built assets and surrounding infrastructure

Energy infrastructure and networks (above and below ground)

Water infrastructure

Pipelines, cables, networks

IT infrastructure

River flood defence

Coastal flood defence

Rail infrastructure

Port infrastructure

Post Industrial – spoil tips, subsidence, dispersed pollution

Waste facilities (including historical landfill)

Emergency response assets



Cwm Taf Morgannwg Climate Change Risk Assessment

Key messages from Climate Change Risk Assessment 3:

Communities – climate risks that frequently emerge at a local level – key issue - what and where in CTM?

thermal comfort for the vulnerable
access to health facilities
business continuity for social services
storm damage to housing stock
repeated flood damage (financial and insurance impacts)
mental health impacts (all ages)
air quality from wildfire and heatwaves
access to work/workforce
water supply
food supply – continuity
long term community feasibility
development blight
local authority service continuity and finance



Cwm Taf Morgannwg Climate Change Risk Assessment

Key messages from Climate Change Risk Assessment 3:

Natural Environment – climate risks that frequently emerge at a local level – key issue – what and where in CTM?

designated sites – species and habitats

wildfire (woodland, heath, peat)

soil loss and mineralisation

agricultural production

forestry production

tree loss – disease – windfall

water quality in rivers and lakes

water supply

coastal erosion

river erosion

peatland erosion

invasive species

reservoir stability

canal stability

dispersed pollution (contaminated land, minewater, historic landfill)

ecological connectivity



Cwm Taf Morgannwg Climate Change Risk Assessment

Key messages from Climate Change Risk Assessment 3:

Business & Industry—climate risks that frequently emerge at a local level – key issue – what and where in CTM?

resilience of premises (business parks)

production processes (heat)

transport networks

product supply networks

business insurance

clean- up costs

workforce access

water, energy, IT networks

overseas supply chains

access to finance

interdependencies on wider systems

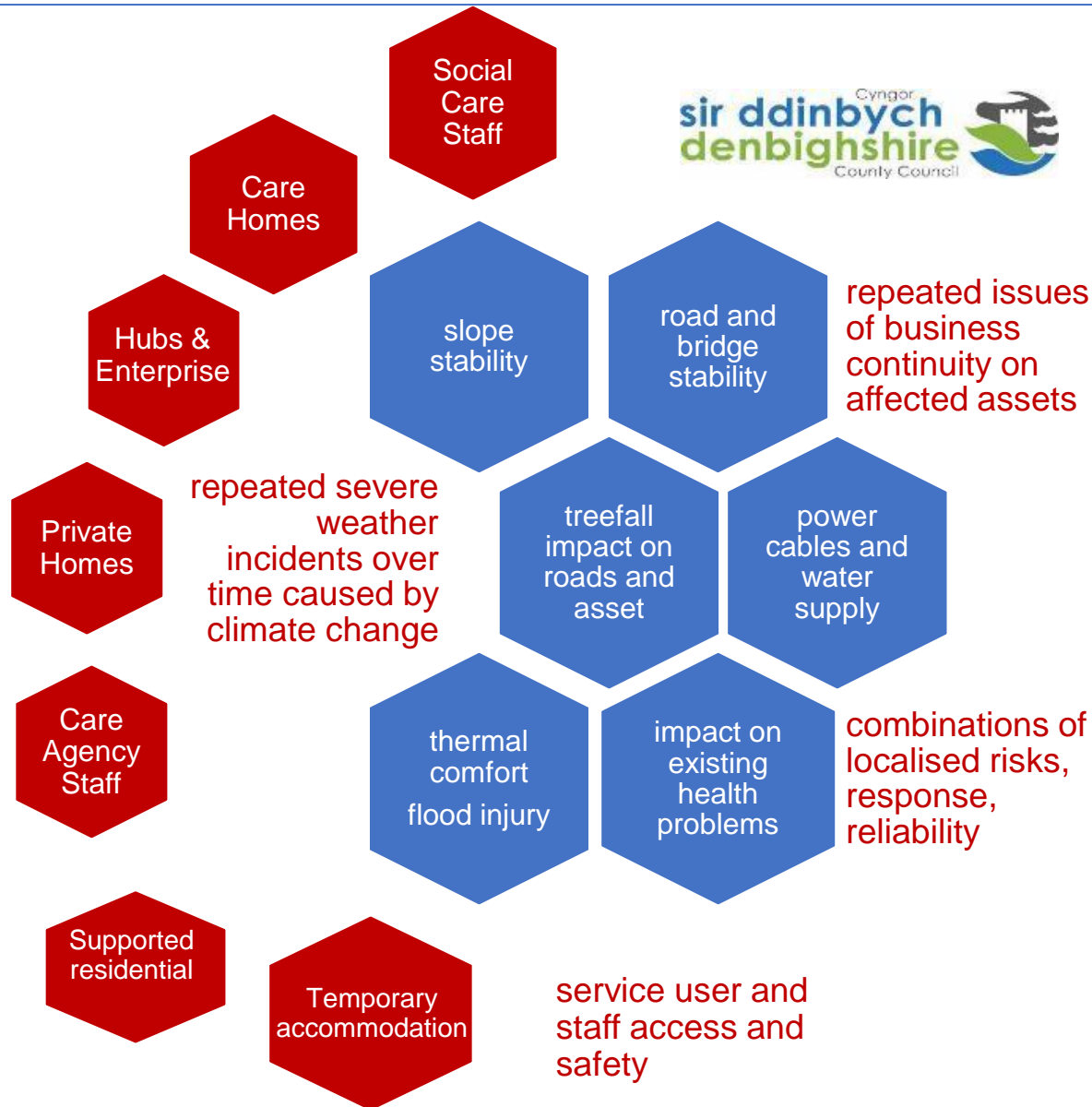
location/cost decisions

agricultural output (food)

tourist offer (sites and activities)



Denbighshire: Adult Social Care CCRA3 – risks are complex and combine in ‘place’ and can cascade. This needs investigating with partners across the board.



Climate Risks to Adult Social Services **Users**

impacts on service users from increasing number of severe weather events (wherever they receive the service) immediate AND cumulative

Climate Risk to **Assets** where Adult Social Services are delivered

repeated and enhanced severe weather impacts on individual assets, resilience, vulnerabilities, business continuity and cost implications

Climate Risk to **Support Systems** for Adult Social Services

resilience of infrastructural networks supporting on-site service delivery in multiple locations and contexts

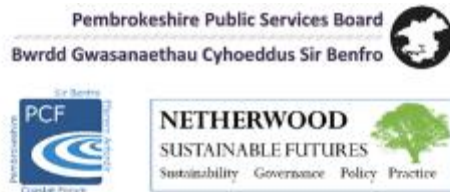
Systemic risks to Service Planning from Climate Change
broader factors that combine with climate risks to stretch service delivery

Pembrokeshire Public Service Board

Leaders will need to plan for additional work within resource constraints

24 specific actions for partners to:

- map
- appraise options
- produce policy and guidance
- review current plans
- integrate climate risk
- engage in dialogue
- shape development



UK Government
Llywodraeth y DU

This project is funded by the UK Government through the UK Community Renewal Fund

Key messages to leaders in Pembrokeshire:

- requires existing resources to be re-organised
- accountability for delivery of the actions is a collective responsibility
- institutions need to alter their current approaches
- **corporate and business planning key**

INFRASTRUCTURE

- I1 - Roads & Highways Network
- I2- Energy Network
- I3 - Land Stability
- I4 - Port & Harbours
- I5- Water & Sewerage
- I6 - Pipelines & Cables Network
- I7 - Information technology
- I8 - Rail Network
- I9- Climate Adaptation Evidence Hub

NATURE & AGRICULTURE

- NA1 - Designated Sites and Landscapes
- NA2 - Landscapes
- NA3 - Soil Resources
- NA4 - Saltmarsh & Seagrass
- NA5 - Coastal Land Management

COMMUNITIES

- CM1 -Climate risk and Communities protocol
- CM2 -Community climate adaptation groups
- CM3 -Climate risk to Health and Social Services
- CM4- Wildfires in a changed climate
- CM5- Heritage Assets in a changed climate

BUSINESS AND INDUSTRY

- BI 1 - Tourism Business Climate Risk Support
- BI 2 - Agri -Business Climate Risk Support
- BI 3 - Fishing Climate Risk Support
- BI 4 - Business & Industrial Assets
- BI 5 -Water Resources & future economy.

Cwm Taf Morgannwg Climate Change Risk Assessment

Iterative co-produced climate risk assessment currently underway



WP1 INFORMATION SHARING

April 2024

online 2.5 hr workshop for stakeholder organisations

- introduction to CCRA3
- what activity is already helping
- where the gaps are
- effective climate risk management practice
- data available and data needs

key actors are engaged

information to understand existing risk management approaches is gathered

WP2 EXPLORING CCRA3 RISKS AREA WIDE:

May 2024

4 online 'surgeries' with invited local experts

infrastructure

community

environment

business/industry

priority risks in each category are identified

key actors are engaged to explore combinations of risks

WP3 PLACE-BASED CLIMATE RISKS

June 2024

place- based risk analysis using documentation and 1-1 discussions

Bridgend North
Bridgend West
Bridgend East
Rhondda Valley
Cynon Valley
Taff Ely
Merthyr Tydfil

3 face to face stakeholder workshops to sense check risk analysis

Bridgend
Pontypridd
Merthyr Tydfil

priority risks in each area are explored

awareness among key actors and communities is raised – risk analysis informed

WP4 PRIORITISING CLIMATE RISKS

July– September 2024

desk-based analysis of WP 1-3

list of risk priorities with commentary

-rationale for prioritisation

-evidence available

-further evidence needed

-key actors to manage risk

sense check risk priorities with participants via email

rationale to address each risk is developed

responsibilities are identified

WP5 REPORT & DISSEMINATION

September - October 2024

production of

- report for the PSB
- summary (ppt) for dissemination

presentation (s) to CTM Public Services Board sub-group and executive

key actors are informed

business case and specific priorities for a climate adaptation communicated to participants and leaders



Health Impacts of Climate Change in Wales: Examining the evidence base and identifying future priorities Some final reflections on climate risk assessment

- complex mosaic of combined risks
- accumulating over time
- in dynamic landscapes and townscapes
- in different service contexts where resources are increasingly constrained

risks to infrastructure, communities, environment and economy are interlinked at different spatial levels

institutional inertia, un-adaptability and silo working is part of the risk and needs to be understood and reflected on

underplaying of the scale of climate risks – management by strategy, plan, funding, not proportionate to likely combined impacts

major gaps in understanding in critical areas – gaps that need to be filled

danger that climate risk assessment can be process driven – rather than outcome driven

Key question to ask yourselves before you start.

what is the climate risk assessment aiming to inform?

strategy, service planning;
service reform,
infrastructural investment,
operations, development,
place –planning, decision-makers thinking?

Diolch yn fawr iawn.

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