



PEMBROKESHIRE CLIMATE ADAPTATION STRATEGY

Workshop 1: Information Sharing Summary & Analysis

February 2022



UK Government
Llywodraeth y DU

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

Pembrokeshire Public Services Board

Bwrdd Gwasanaethau Cyhoeddus Sir Benfro



1. Introduction

1.1 This brief report summarises an online workshop run on 20th January 2022. This workshop was the first of five between January and May 2022 for partners to develop a county-wide Pembrokeshire Climate Adaptation Strategy.¹ The process is being coordinated by Pembrokeshire Coastal Forum (PCF) and Netherwood Sustainable Futures (NSF), with the support of Pembrokeshire Public Services Board and Pembrokeshire County Council. The support is funded by UK Community Renewal Fund.

1.2 This activity is seeking to involve key agencies, all Pembrokeshire PSB partners, businesses and local community organisations, to develop a 5-year strategy to increase the resilience of Pembrokeshire to future climate risks.

1.3 It is important to note that this work is about coping with future changes to the climate in Pembrokeshire. It is focused on the following:

Climate Adaptation which helps to minimise risks from changes we are already bought into from past emission, including unpredictable severe weather; sea level rise; changes in natural systems that we rely on.

Climate Risks: multiple risks likely to arise from changes to our climate: which may impact on the local economy; natural environment; infrastructure; communities; people's well-being both now and in the future.

Climate Resilience: ensuring that the county can deal with the risks from climate change and be prepared for the future.

1.4 It should clear that this work is not about **Climate Mitigation** which aims to reduce, prevent and limit the rate of emissions which contribute to climate change from Pembrokeshire; or **Decarbonisation** which removes or extracts carbon from energy sources used in Pembrokeshire, reducing CO₂ emissions. Other work is underway in Pembrokeshire by public bodies, business and industry and third sector and community groups to address these issues.

1.5 The aim of this first workshop was to:

- share our latest understanding of climate risks to Wales, provided through the UK Climate Committee's work on Climate Change Risk Assessment 3² (2021) and particularly: its summary for Wales
- to explore what activity already contributes to climate risk management in Pembrokeshire – and therefore begin to focus on what additional work needs to be done through a county-wide strategy and 5-year programme from 2022-2027
- to begin to understand some of the gaps in knowledge, priorities specific to Pembrokeshire and the role of different partners in planning climate resilience

1.6 PCF and NSF, with support from Pembrokeshire Public Services Board invited attendees from the public, business, utility, academic and community sectors. A total of 27 people attended contributing to a series of exercises on the day. Attendees are shown in Appendix B.

¹ See Appendix 1 for the Workshop Agenda and Workshop Programme between January and June 2022

² <https://www.ukclimaterisk.org/wp-content/uploads/2021/06/CCRA-Evidence-Report-Wales-Summary-Final.pdf>

1.7 These exercises have provided valuable information which will be used to inform later stages of Strategy development. The following sections describe and provide some analysis of the information gathered in the workshop. The introductory presentation on CCRA3 has been recorded and is available to view here: https://youtu.be/4PR-Nutin_o

2. Climate Change Risk Assessment 3 – why is it important for Pembrokeshire?

2.1 A PowerPoint presentation was provided from Dr. Alan Netherwood, co-author of the UK **Climate Change Risk Assessment 3** with the UK Climate Change Committee and author of the **CCRA3: Wales Summary** Report. The aim of this was to share the latest understanding of climate risks to Wales, to stimulate participants thinking and to thinking and to explore what the challenge of climate adaptation challenge means for Pembrokeshire

2.2 The presentation covered:

- a) CCRA3's status influencing UK and Welsh Government policy
- b) the breadth of the 61 environmental, infrastructural, community, business and industry and international risks analysed
- c) how the risks analysis method accounts for existing strategy, policy, investment and actions in Wales
- d) an overview of risks where the assessment emphasises that more action is needed in Wales (see Appendix C for a list of these)
- e) examples of the detail of analysis which can help partners in Pembrokeshire to explore priorities for the action plan
- f) observations on Pembrokeshire's potential priorities given Alan's work on CCRA3 including:
 - the relationship between climate adaptation and nature recovery in Pembrokeshire – doing what and where would help with both agendas?
 - the medium to long term resilience of infrastructure that Pembrokeshire's economy and communities rely on, including roads; rail; flood risk works; water resources; agriculture; and public services
 - the ability to manage cascading risks and long-term planning for multiple future climate impacts – transport, energy, communication networks and supply chains, built and land assets
 - the scale of impact on communities on coast and inland – factoring in change into planning services and communities into the future – spatial and service contingencies
 - the impact on natural and cultural heritage assets through climate change - tourism economy and agricultural economy
 - adapting the role of land and soil management: both for publicly owned land and farm businesses

A clear message was that CCRA3 provides evidence that the Pembrokeshire Climate Adaptation Strategy can draw on – but that these risks need to be considered in more detail at a local level to consider local contexts and priorities.

2.3 Attendees who were asked to undertake an exercise to record their questions, observations, suggestions on the adaptation challenge set out in CCRA3. The following tables summarise these:

2.4 Broad issues that need to be addressed on climate risk: attendees were able to raise many issues related to managing climate risks in Pembrokeshire.

<ul style="list-style-type: none"> • How do we measure success in managing future risks? • Funding available to future proof • Business knowledge and available mechanisms to manage business risk • Future capacity of emergency services • Urgency of the challenge; need for future planning now • The complexity of effective solutions • Limited profile of the links between responding to the nature emergency and climate adaptation at the same time • Climate 'proofing' future energy infrastructure (including renewables) from multiple climate risks • Maintaining agricultural productivity on Pembrokeshire's high quality and versatile agricultural land • Maintaining a high-quality natural environment for agriculture and tourism and local economies • Making those engaged in the tourism industry aware of the climate threats (and indeed opportunities for tourism) • Recognition of the broad types of infrastructure that are at risk and need to plan forward • Identifying opportunities where approaches to adaptation and mitigation can complement each other e.g., in land management 	<ul style="list-style-type: none"> • understanding climate risks in no active intervention areas on the coastal strip, particularly affecting agricultural land use • strategic and financial responses to the relocation of climate migrants moving within Wales • legal protection for climate migrants [within Wales?] and from overseas • impact of climate risks on local agricultural production, in relation to food security • the relationship between agricultural land value across Pembrokeshire and adaptation solutions • relationship between higher water temperatures and phosphate pollution -SACs failing phosphates targets in Pembrokeshire already - both Cleddau and Teifi. • work on shorter supply chains for food primarily to build resilience to transport and food supply risks • cultural and historic assets are also at risk. Listed Buildings at risk in Lower Town Fishguard; St Patrick's chapel and ancient burial ground at Whitesands getting washed away. • agricultural sectors' role in maintaining and enhancing carbon sequestration and storage through our soils, grassland, hedgerows, woodlands etc.
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

2.5 Solutions to address climate risk: Attendees also focused on activities where climate risks from CCRA3 were already or could be factored into forward planning including the following:

<ul style="list-style-type: none"> • identifying how action planning through the Local Development Plans and Shoreline Management Plan can support adaptation. • Local Planning Authorities are to refresh Strategic Flood Consequence Assessments over the next two years. • a shift to a managed realignment policy (Whitesands, Solva, Little Haven, Broadhaven, Nolton Haven, Dale, Castlemartin, Freshwater East, Tenby Saundersfoot); requiring a phased programme of business case development to 	<ul style="list-style-type: none"> • building on the Fishguard and Goodwick Pilot Project to give us an idea of how to go about this issue on a county-wide scale. • focussed action planning by the Coastal Groups after the Shoreline Management Plan refresh of Pembrokeshire- West Wales SMP and South Wales SMP. • evidence pending on impact on the marine environment and work on how marine habitats can be managed to reduce risks • bottom out the residual life and diminishing standard of protection for all hold the line policy
-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

ascertain options for managing flood risk on communities and infrastructure (e.g., Newgale)	areas in Pembrokeshire: through NRW's Assets Facing Change Programme where ongoing
---------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------

2.6 Communicating and engaging on climate risk: Attendees were also able to identify several important aspects of engaging the community on this issue.

<ul style="list-style-type: none"> • methods of communicating climate risk to the people of Pembrokeshire, in a way that is mobilising and positive, and protects psychological wellbeing. • need for a wider discussion on the number of communities that are too costly to adapt to changing sea levels and that some will have to be abandoned • ensuring community understanding of climate change and sea level rise difference between adaptation/resilience 	<ul style="list-style-type: none"> • citizens need to be engaged in decision making about what adaptations might look like in their community, so people feel like part of the solution. • community voices are not necessarily the right voices for future generations. • ensuring farmers are part of the discussion and decision-making around adaptation
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

These observations illustrate the complexity and the broad range of issues a Climate Adaptation Strategy may need to address.

3. Pembrokeshire’s existing strategies, plans, programmes, policies

Attendees were asked to explore what activity already contributes to climate risk management in Pembrokeshire. This helps us to think about what a Climate Adaptation Strategy needs to do in addition to current activity; to capture practice and improve our understanding of actions that are required.

In order to stimulate their thinking; the schematic of Pembrokeshire’s various strategies and plans was provided³ and in a series of breakout sessions attendees were invited to identify activity that already helps to address climate risk; activity which needs to factor in more about climate risk management; and activity that represents good practice on adaptation.

Please refer to Appendix D before reading on.

The following table indicates comments made on plans and how they relate to climate risks

Policy identified in exercise	How it relates to climate risk
Local Development Plans: Pembrokeshire County Council; and Pembrokeshire Coast National Park	critical in providing strategic context to steer location of new development away from areas of climate risk. They are supported by Supplementary Planning Guidance.
Shoreline Management Plan 2: West Wales and South Wales	provides a 100-year perspective that spans the period where up to 1m + sea level rise is projected. This is planning the direction of travel for flood risk management across Pembrokeshire.

³ See Appendix D Schematic on Pembrokeshire’s Strategy, Plans, Programmes and Projects

Pembrokeshire LBAP and Nature Recovery Action Plan	Links to climate risk undefined
Area Statements: South West Area & Marine Area Statement	Identifies climate risk as an issue to address as part of approach to sustainable management of natural resources
Welsh National Marine Plan	20 years broad aims for increasing understanding climate risk and climate resilience for the marine environment.
Pembrokeshire Destination Management Plan	Links to climate risks are undefined
Technical Advice Note 15 Development and Flood Risk	Guidance for local planning authorities to reduce flood risk and develop away from high-risk areas
Pembrokeshire Public Rights of Way Plan	includes climate adaptation to ensure coast path continues, with its economic benefits to Pembrokeshire.
Strategic Development Plan for South-West Wales	a new Strategic Development Plan for South West Wales is to be produced over the next 5 years by a Coordinating Joint Committee (CJC) - required by law to factor in and address climate risks. The CJC will develop plans for regional transport, economic development and planning over the new few years - those involved will need to ensure climate adaptation is factored in at a region level
Local Placemaking Plans	PCC has commissioned Local Placemaking Plans - led by the regeneration team. {How many are there and where are they focusing?} Link to Climate Risk undefined
Building Regulations	Building Regulations Part L (conservation of fuel and power) and Part F (ventilation) aim to ensure buildings are able to deal with flooding and provide adequate ventilation.
Western Wales River Basin Management Plan	Focused on Afonydd, Cleddau and Milford Haven. Links to climate risk are undefined.
Section 6 duty on biodiversity and resilience of ecosystems	Links to climate risk are undefined
Western Power Distribution Business Plan	WPD are preparing their Business Plan for 2023-2028 (RIIO-ED2) and it includes a Climate Resilience Strategy [Is there anything other bodies can learn from this process?] Please note text in purple are in addition to those show on a schematic.

This exercise enabled attendees to reflect on the complexity of the strategic planning activity going on a Pembrokeshire level and suggests that in many cases partners need to be clearer about how the plan specifically contributes to climate resilience, over and above mentioning it as a critical issue to plan forward for.

It is recommended that partners will need to reflect on this issue more to understand what additional activity on adaptation will complement existing forward planning and where gaps need to be addressed. Partners also need to focus specifically on where there are opportunities to develop evidence, actions and governance to address climate risk: e.g., CJs and Local Placemaking Plans.

4. Examples of climate adaptation in Pembrokeshire

As part of the exercises described in 2 and 3 above, attendees were able to identify activity which they suggest contributes to climate resilience in the County. The examples are provided in the table below: they indicate what attendees perceive as good practice in managing climate risk, but at this stage they have not, in most cases, described how they contribute to climate resilience.

Adaptation Activity?	Description and how it relates to climate risk
Newgale Adaptation	Co-design with the community of an Adaptation Strategy to deal with Coastal Erosion
Growing Better Connections	Growing Better Connections is engaging landowners in considering adaptation of land use with enhancement of biodiversity in mind. https://www.cwmarian.org.uk/gbc . Links to climate risk undefined.
Marine Protected Areas Report	NRW are currently working on a report on how management of Marine Protected Areas can help protect Blue Carbon (Carbon sequestered in marine habitats). Report should be published in the next couple of months. Links to climate risk undefined.
National Trust Shifting Shore Policy	National Trust shifting shore policy - https://www.nationaltrust.org.uk/features/coastal-change-at-abereiddi . Links to climate risk undefined.
Newport Town Council Bee Friendly Area	Newport Town Council - bee friendly community section in town. Links to climate risk undefined.
NRW Catchment Flood Reviews.	10-point process for; communication, consultation and engagement; due diligence flood risk management review. Flood consequence assessments; appraisal; screening; flood risk management and coastal adaptation.
PCC and PCNPA Biodiversity Supplementary Planning Guidance	PCC and PCNPA Biodiversity Supplementary Planning Guidance sets out specific biodiversity enhancements that can be included within different development types. Links to climate risk undefined.
Coastal Adaptation Programme	The programme is called the Coastal Adaptation Programme - incorporating the National Habitat Creation Links to climate risk undefined.
PCC County Farms Policy	PCC County Farms Policy now uses a break in tenancy as an opportunity to assess the contribution a farm can make across the Authority's duties - ecosystem resilience, climate change, wellbeing etc - as well as food production
Mid and West Wales Fire and Rescue Service - water use	Fire Service - water use. Use of alternatives to clean water including wastewater from water treatment plans. Links to climate risk undefined.
Car-Y-Mor Seafood Farm plans on, Ramsey Sound	Links to climate risk undefined.
Under sowing maize crops	Farming Connect/Dwr Cymru project under sowing grass seed into a standing maize crop to provide ground cover to stabilise soil at harvest and prevent soil runoff over winter.
Ecological enhancement on development boundaries	Ecological enhancements on new development boundaries such as hedges help to reduce run-off.

PCNPs Conserving the Park Scheme	Links to climate risk undefined.
Local Places for Nature	Changes to grassland different cutting regimes in parts of Haverfordwest and changing some areas of management of open spaces. Links to climate risk undefined.
NRW Marine Habitat Restoration	e.g., conservation project to restore native oysters Links to climate risk undefined.
Seagrass Project, Swansea University	Restoration of 2 Ha of underwater seagrass meadows are being restored at Dale Bay in Pembrokeshire to tackle climate change with benefits' carbon absorption; carbon storage; protects the coasts from erosion caused by climate change.
Photo Points	Public awareness raising through photo points along coast path to capture coastal change.
Cleddau Reaches Project Haverfordwest	includes habitat restoration, managing non-native invasive species, tree planting for flood alleviation
Wolcastle Tree Planting	multi -partner project creating woodland. Links to climate risk unclear
Pembrokeshire Action for Climate Emergency (PACE) Network	a newly formed network who have come together to harness Pembrokeshire's community response to the climate emergency: working to raise awareness; increase community involvement and provide opportunities to be part fo the solution.
Grwp Resilience	Grwp resilience working on community land and shorter supply chains and greener health. These are part of a community adaptation to threats ahead and present. Grwp Resilience is currently working on community growing land. in urban areas. This is adaptation and mitigation for self-reliance and resilience to poverty or food supply risks.
Natur a Ni programme (NRW)	Welsh language TV programme gaining views of public in Wales about climate and nature emergencies and actions needed going forward:
Mid and West Wales Fire and Rescue Service - wildfire research	Research to explore the impact of wildfire interventions and firefighting methods in managing wildfires within our communities.
PCC LDP Policy	Allows businesses /residential properties located in coastal adaptation areas e.g., Newgale to relocate to areas where development would not normally be permitted
Public Health Wales Research	on potential different impacts from climate change on different groups (disability and income)

It will be critical for partners developing the Climate Adaptation Strategy to understand exactly what benefits these activities provide for climate resilience rather than just listing activities or projects that are underway. There is more work to be done to refine and define practice which contributes to this agenda in Pembrokeshire.

5. Available evidence and gaps in knowledge

The next exercise enabled participants to explore what evidence is available and sought to identify where there are gaps in our knowledge on climate risks in Pembrokeshire. The following sources of evidence were cited. These are shown in the table below.

Evidence source	What information it provides
UK level projections which informed CCRA3	UK Climate projections and technical reports which underpinned CCRA3 for Wales
Climate Change Risk Assessment 3: Wales Summary (UKCCC) (2021)	Analysis of 61 climate related risks assessed taking into account Wales level policy and action. Identifies breadth of risks, the importance of multiple and cascading risks, adaptation gap and actions which will support climate resilience over the next five years
Technical Advice Note 15 Development and Flood Risk (WG)	Evidence on sea level rise and flood risk in the future and its localised impact to inform development.
Flood risk Maps (NRW)	Evidence on sea level rise and flood risk in the future and its localised impact to inform development.
Strategic Flood Consequences Assessment (PCC)	Evidence on sea level rise and flood risk in the future and its localised impact to inform development.
Newgale Adaptation Project	A 5-step business case approach, community engagement and case study on sea level rise and its impact on a community
SoNaRR20 State of Natural Resources Report	Links to climate risk undefined.
ADAS Capability Suitability & Climate Change Programme & Soil Programme	Potentially suitable locations to grow specific food, fibre, forestry, ornamental, energy and pharmaceutical crops under future climate change scenarios under current and future climatic conditions using UKCIP18 predictions. Potential impact on soils
Communities at Risk Register (NRW)	Locations of greatest risk of flooding from given current [and future?] conditions. These are scored and ranked
Climate change in Welsh Marine Area Report (2020)	High-level information on potential risks to our marine and coastal environments, covering physical, biological and socio-economic receptors. The report also highlighted evidence gaps and uncertainties that we are looking to address via NRW Marine Biodiversity Evidence Programme.
Assets Facing Change (NRW)	condition of FRM assets and their residual life expectance - linked to SMP2 transition of policy this underpins NRW's assets facing change Programme
Landscape and a Changing Climate to 2050 (NRW)	Land map, Landscape and a Changing Climate - NRW mapping. – Identifies and communicates the impacts of projected climate change for Wales 2050 on landscape character and qualities
MarCLIM (NRW)	Assesses changes in the range and distribution of key species (as well as non-natives) on our shores.
Blue Carbon Stock Take Report (NRW)	Links to climate risk undefined.

Coastal Access and Shoreline Management Plans	Evidence on where PRow and WCP may be affected by coastal adaptation identified in SMPs
National Trust	maps out climate threat to coast, countryside and historic places [including Pembrokeshire Assets?]
Local wildlife records (phenology)	Evidence of species e.g., bird breeding, bats hibernating local flora and fauna.
Energy UK Climate Risks to Energy Generation	Climate risks and adaptation for UK Energy Sites

Clearly, this is a first sift of the evidence readily available on Pembrokeshire climate risks. Further work needs to be done to understand what this information can tell us about specific risks listed in CCRA3 and how this will impact in various ways across the County and in particular communities. Much of this data focuses on flooding and coastal change which are part of a much wider set of risks outlined in CCRA3. As this project progresses, we will begin to understand what further data will be required to understand climate risks and plan forward to address data gaps.

6. Examining CCRA3 risks in more detail for Pembrokeshire

6.1 In order to examine what the CCRA3 risks mean for Pembrokeshire in more detail it was proposed that PCF and NSF organise and facilitate a number of specific ‘**Climate Risk Surgeries**’ over a week to engage with local experts. The aim of these surgeries would be to

- examine each of the 61 CCRA3 risks in detail to understand how experts see these risks in the Pembrokeshire context
- identify which of these risks needed the most urgent attention as part of a Climate Adaptation Strategy

Similar approaches have been used in other parts of the UK to use CCRA3 evidence at a local level supporting local climate adaptation planning.⁴

6.2 It was agreed that a series of 2.5 hr Climate Risk Surgeries would be arranged by PCF and NSF to focus on:

- natural environment (including agriculture)⁵
- infrastructure
- business and industry (including international dimensions)
- community

It was recognised that there would be a number of cross cutting themes across the surgeries (for example farming or landscape or infrastructure could apply across several themes), and that this aspect would be considered as part of the process.

6.3 Each surgery will involve a small number of people – to focus in on detail. Experts will be invited to take part and the work session will be facilitated by NSF with support from PCF. The Pembrokeshire PSB Sub-Group will advise on the most appropriate representatives at each surgery. It is proposed that the surgeries take place in between 3rd and 14th March

⁴ NSF consulted with Sustainability West Midlands; Climate Northern Ireland; SNIFFER in Scotland and London Climate Change Partnership to understand effective methods of approaching local risk assessment.

⁵ This may require two shorter surgeries due to the high number of risks in this category

6.4 The outcomes of the surgeries will inform the third Workshop planned on 22nd March which is focused on **Prioritising Actions** for the Climate Adaptation Strategy. PCF will ensure that the wider group of stakeholders will be able to comment on and shape the priorities suggested at this point.

7. Stakeholder Analysis

A final exercise was undertaken to understand:

- who should be engaged and informed about the work being undertaken on Pembrokeshire Climate Adaptation Strategy over the next six months.
- who should be involved in detailed forward planning.
- and the individuals with specific responsibilities that are relevant to some of the issues that had emerged during the workshop

Attendees were invited to identify contacts under four themes: environment; economy; infrastructure and community. PCF will use this information to target communications each stage of the project.

8. Next steps

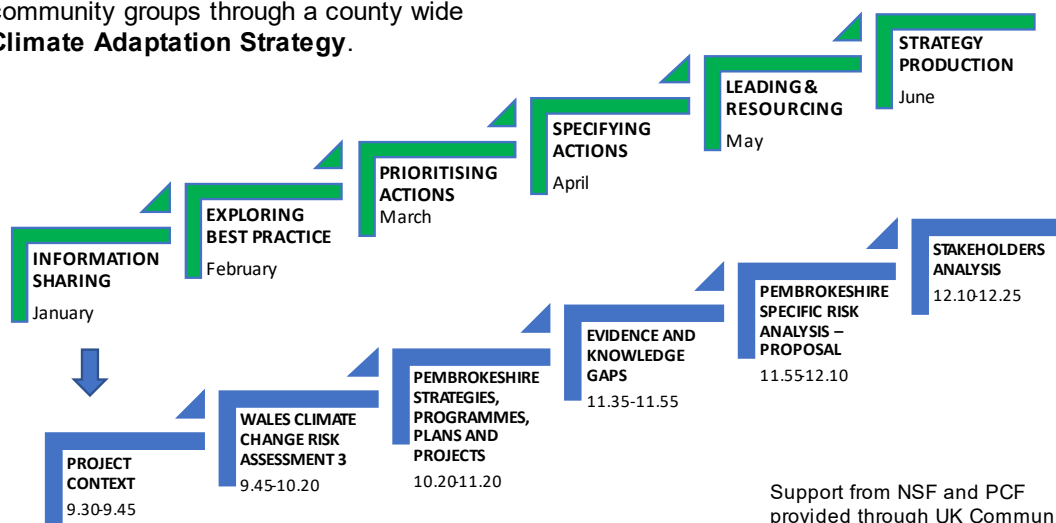
The second Workshop **Exploring Best Practice** is on 22nd February running from 9.30-11.30 will focus on how other regions, places and authorities are addressing climate adaptation at strategic, organisational, operational and community levels. As well as learning, participants will be able to explore what approaches might be replicable in Pembrokeshire's context, and how others' approaches might be adapted to address local needs.

Appendix A: Workshop Agenda and Workshop Programme between January and June 2022

PEMBROKESHIRE CLIMATE CHANGE ADAPTATION STRATEGY
Workshop 1- INFORMATION SHARING
PROJECT CONTEXT 9.30 -9.45



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



Support from NSF and PCF provided through UK Community Renewal Fund via Pembrokeshire Council; project guided by Public Services Board Climate Change Sub-group

Appendix B: Participants in Workshop 1 – Information Sharing

Zoe	Abbott	Keep Wales Tidy
Ceri	Beynon-Davies	NRW
Holly	Cross	Cwm Arian
Seamus	Doyle	MAWWFIRE
Yvette	Eley	NRW
Nicola	Gandy	PCNPA
		Councillor for Newport, Chair of
Paul	Harries	PCNPA
Peter	Howells	NFU
Steve	Keating	PCC
Tom	Latter	Transition Bro Gwaun
Angharad	Llewelyn	PCC
Helen	Lucas	NRW
William	Mansfield	NRW
Andy	Martyr-Icke	Western Power
Vicky	Moller	Grwp Resilience
Rhys	Morgan	NRW
Sara	Morris	PCC
Richard	Park	NRW
Jemma	Rees	PCC
Ant	Rogers	PCC
Robert	Smith	PCC
Emma	Taylor	NRW
Sarah	Thorne	Hywel Dda
Emma	Thornton	Visit Pembrokeshire
Emma	Wiik	NRW
Ben	Williams	RWE
Liz	Williams	Visit Pembrokeshire

Appendix C: Climate Change Risk Assessment 3 Risks for Wales

NATURAL ENVIRONMENT & ASSETS	INFRASTRUCTURE
N1. Terrestrial species and habitats	I1. Infrastructure networks (water, energy, transport, ICT)
N2. Terrestrial species and habitats (INNS)	I2. Infrastructure services (riverine)
N4. Soils	I3. Infrastructure services (coastal)
N7. Agriculture	I4. Bridges and pipelines
N8. Forestry	I5. Transport networks
N10. Aquifers and agricultural land	I6. Hydroelectric generation
N11. Freshwater species and habitats	I7. Subterranean and surface infrastructure
N12. Freshwater species and habitats (INNS)	I8. Public water supplies
N14. Marine species, habitats and fisheries	I9. Energy generation
N16. Marine species and habitats	I10. Energy
N5. Natural carbon stores, carbon sequestration	I11. Offshore infrastructure
N6. Agricultural and forestry productivity	I12. Transport
N17. Coastal species and habitats	I13. Digital
N18. Landscape character	
N3. New species	Red boxes assessed as More Action needed in Wales
N9. Agricultural and forestry productivity	Blue text denotes issue with both risks and opportunities
N13. Freshwater species and habitats	
N15. Marine species, habitats and fisheries	
HEALTH COMMUNITIES AND THE BUILT ENVIRONMENT	BUSINESS & INDUSTRY
H1. Health and wellbeing (temperatures)	B1. Flooding of business sites
H3. People, communities and buildings (flooding)	B2. Coastal business locations and infrastructure
H4. Viability of coastal communities (sea level)	B3. Business production processes
H5. Building fabric	B4. Business access to finance, investment and insurance
H7. Health and wellbeing (air quality)	B5. Reduced employee productivity in businesses
H8. Health	B6. Supply chains and distribution networks
H9. Food safety and food security	B7. Changes in demand for goods and services
H10. Health (house water supply)	
H11. Cultural heritage	INTERNATIONAL DIMENSIONS
H12. Health and social care delivery	ID1. Food availability, safety, and quality
H13. Education and prison services	ID3. Migration and effects on the UK's interests overseas
H6. Household energy demand	ID4. The UK's international interests and responsibilities
H2. Health and wellbeing (high temperatures)	ID5. Changes to international governance affecting the UK
	ID7. International trade routes
From Climate Change Risk Assessment 3: Summary for Wales UKCCC & Netherwood Sustainable Futures (2021)	ID8. Risk to the UK Financial Sector
	ID9. Risks to Public Health from Overseas
	ID10. Risk multiplication to the UK
	ID2. UK food availability and exports
	ID6. Increased trade for the UK

Appendix D: Schematic of Pembrokeshire Strategies, Plans, Programmes and Projects

