


# Appendix C – Flood and coastal erosion risk management governance in Wales: summary of evaluation findings

The following tables summarise the main strengths and weaknesses within current FCERM governance in Wales. There are 3 tables, organised according to **process, outcome** and **impact**-orientated evaluation criteria (as outlined in [Appendix A](#)). These findings are based on extensive document analysis and interviews with stakeholders in FCERM, and are presented in no particular order.

**Certain findings are shared across England and Wales – as signified by 2 asterisks (\*\*).**


Please note that references are cited in the main report ([‘Evaluating the effectiveness of flood and coastal erosion risk governance in England and Wales’](#)).


**Table C1: Process-based evaluation of FCERM governance in Wales<sup>1</sup>**

Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>•** Strategic direction is established in the National FCERM Strategy for Wales (Welsh Government, 2020a). RMAs are required to act consistently with this (with monitoring in the form of Section 18 reporting; NRW, 2019a).</li> <li>•** RMAs are acting in accordance with national policies, strategies and guidance.</li> <li>• The strategic oversight role of NRW is an essential aspect of FCERM governance for maintaining line of sight from the national to the local scale. Greater clarity is provided in the revised National FCERM Strategy (Welsh Government, 2020a).</li> <li>•** The Flood and Water Management Act 2010 provides greater clarity of roles and responsibilities, especially for surface water management.</li> <li>•** The Coastal Groups Network (CGN) and Wales Coastal Groups Forum (WCGF) helps facilitate the exchange of information between local and national scales. Coastal Groups also adopt a shared terms</li> </ul>


<sup>1</sup> **Process** refers to the way in which decisions are made within FCERM governance.

Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>of reference, developed by the CGN, to help maintain a degree of consistency.</p> <ul style="list-style-type: none"> <li>• The national Flood and Coastal Erosion Committee (established in 2019) acts in an advisory capacity and will also provide independent scrutiny of NRW's Section 18 reports (Welsh Government, 2020a).</li> <li>• There is a clear policy discourse towards 'doing things differently' and growing expectation towards implementing multi-beneficial initiatives, which is advocated from national to local scales.</li> <li>• Legislation mandates five ways of working – long-term perspective, prevention, collaboration, integration and involvement (as outlined in the Wellbeing of Future Generations (Wales) Act 2015, therefore establishing a clear line of sight for how actors/decision-making should be carried out.</li> <li>• The National Habitats Creation Programme (established in 2009) maintains a line of sight by providing a strategic approach to identifying and creating compensatory habitats to offset coastal habitat losses associated with the implementation of SMP2, the FCERM programme and coastal squeeze.</li> <li>• Regional Flood Groups (established since 2010) provide a forum for sharing good practice and resources (knowledge, information, data), and supporting dialogue between practitioners, Welsh Government and the Flood and Coastal Risk Programme Board.</li> <li>• New reporting requirements have also been introduced through the Welsh National FCERM Strategy, requiring Coastal Groups to report to the WCGF on annual progress on the Shoreline Management Plan (SMP) Action Plan, which will further strengthen monitoring and maintain line of sight.</li> </ul>
	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>•** The complexity and confusion surrounding roles and responsibilities has continued to be raised by scrutiny bodies in England and Wales. This concern was also voiced by some interviewees, alongside calls for a legislative review (including the Coast Protection Act 1949 and the Flood and Water Management Act 2010).</li> <li>•** Interviewees emphasised the need to clarify and establish the legal remit of roles and responsibilities pertaining to climate change adaptation, noting that governance for adaptation is highly fragmented and unclear.</li> <li>•** Misalignment of policy/funding cycles was reported to be inhibiting opportunities for better partnership working (also see CCC, 2019).</li> <li>•** In some situations, there is a reported mismatch between those who have a formal role/responsibility and those who have the capacity and capability to act (especially at the local level).</li> <li>• Adaptation is noticeably absent from the strategic objectives stated in the Welsh National FCERM Strategy (Welsh Government, 2020a),</li> </ul>


Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>with calls for a greater sense of urgency and strategic guidance from Welsh Government.</p> <ul style="list-style-type: none"> <li>• FCERM Business Case Guidance (Welsh Government, 2019c) encourages multi-beneficial schemes, yet this is least weighted in funding determinations, therefore restricting incentives to develop such schemes.</li> <li>• Maintaining line of sight in spatial planning is challenged by weaknesses in monitoring, which is dependent on LPAs returning this information. However, there are inconsistencies with this and resource constraints often mean that this activity is deprioritised.</li> <li>• The ability of NRW to carry out its strategic oversight role is dependent on appropriate provision of resources to which there has been some expressed concern.</li> <li>• Certain limitations have been observed with regards to Regional Flood Groups in relation to their non-statutory nature, the lack of seniority in members and ‘inability of current members to make corporate commitments’, which mean the groups often lack strategic direction (WLGA, 2018: 18).</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>•** The importance of place-based approaches is embedded in the national FCERM strategy and there is greater emphasis on tailoring approaches to realise place-based solutions which are considered to be more fit for purpose.</li> <li>•** There is flexibility among Coastal Groups to enable place-relevant discussions to inform the implementation of SMP2 Action Plans.</li> <li>•** LLFAs are responsible for developing, maintaining and applying a local flood risk management strategy for their area.</li> <li>•** Place-based needs are informed through participation/involvement (see separate evaluation criteria).</li> <li>• Place-based approaches are reinforced through complementary policy and legislation, particularly through the Environment (Wales) Act 2016, which established Natural Resources Policy for Wales (Welsh Government, 2017) and Area Statements. The intention is that Area Statements will act as important governance mechanisms to provide the evidence-base for the sustainable management of natural resources and help identify opportunities for collaborative working, through which multi-benefit approaches and catchment-based management can be carried out.</li> <li>• NRW has undergone an organisational restructure to mirror the new area-based approach, with teams now cut across job functions to make it easier to identify multiple benefits and implement placed-based approaches.</li> <li>• The concept of ‘placemaking’ is a central principle of Planning Policy Wales (Welsh Government, 2018a). This is defined as an inclusive process (involving those with professional and personal interests in</li> </ul>

Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>the built and natural environment) to create sustainable places and maximise wellbeing.</p> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>•** Resource constraints, particularly among local authorities, were consistently highlighted as limiting the place-based implementation and the ability of actors to engage in partnerships/collaborations.</li> <li>• It is too soon to evaluate the effectiveness of Area Statements (published early 2020). Whilst promising, there are some limitations, such as weak legislative wording (for NRW to ‘encourage’ their use and requirements for public bodies to have ‘regard to’ Area Statements) and they only apply to public bodies.</li> <li>• Also see weaknesses associated with <b>Participation &amp; Involvement</b>.</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Medium-term capital commitments are established in the 4-year Flood and Coastal Investment Programme (2017/18 to 2020/21, available to LLFAs and NRW) and a separate 3-year (2018/19 to 2020/21), £150 million Coastal Risk Management Programme (CRMP), which is available to LLFAs only. Medium-term capital commitments provide opportunities for RMAs to ‘package’ projects and source competitive prices from suppliers, creating greater resource efficiency.</li> <li>•** Multiple benefits are encouraged through funding criteria (albeit this is the least weighted).</li> <li>•** New windows of opportunity exist for aligning FCERM with other socio-economic and environmental agendas and sharing resources within the public sector to maximise efficiency (for example, via the Sustainable Farming Scheme).</li> <li>•** The principle of proportionality is embedded in FCERM to ensure that planning and managing for floods is proportional to the risk at hand (for example, the Communities at Risk Register informs emergency management and funding allocations for FCERM schemes).</li> <li>• The match funding model seeks to promote co-funding arrangements and broaden contributions from private and third sectors. There are examples where FCERM schemes have been successfully delivered through alternative funding streams – (for example, Colwyn Bay waterfront scheme and West Rhyl coastal defence scheme). In such cases, FCERM schemes have been aligned to other benefits (such as economic growth).</li> <li>• There is a dedicated FCERM budget, which has been broadly stable from 2010-11 to 2016-17, allocating £381 million for FCERM activities (£219 million of which was allocated to capital schemes: Auditor General for Wales, 2016).</li> </ul>

Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>● Public bodies are required to consider the 7 national wellbeing goals equally and maximise contribution to these. In reviewing FCERM schemes, Welsh Government makes efforts to ensure that these goals are properly considered to avoid a ‘tick box’ exercise.</li> <li>● Area Statements (required through the Environment (Wales) Act 2016) outline ecosystem services and opportunities for providing ecosystem-based management to maximise efficient use of resources.</li> <li>● Organisational restructuring in NRW could enhance efficiency and help to better identify multi-beneficial schemes.</li> <li>● The Small Scale Works Grant provides easier access to funding for maintenance and natural flood management (NFM) approaches (although the latter have been limited to date), making up to £150,000 available to LLFAs. This has been allocated £1 million annually until 2021.</li> <li>● Development of business case guidance has improved efficiency by providing a ‘scalable’ approach (NRW, 2019a).</li> <li>● Standing advice for proposals for highly vulnerable development in high flood risk areas will be rolled out as part of efforts to maximise resource efficiencies, while improving consistency (NRW, 2019a).</li> <li>● Regional Flood Groups provide a forum for sharing good practice and resources (knowledge, information, data), joint training exercises and supporting dialogue with Welsh Government and the Flood and Coastal Risk Programme Board (thereby also supporting ‘line of sight’).</li> </ul>
	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>●** A coherent strategy (and mechanisms) for incentivising private sector involvement and generating new funding streams, is lacking.</li> <li>●** Shortfalls in revenue/resource funding were consistently identified by interviewees as an ongoing weakness within FCERM governance.</li> <li>●** Additional resources are seen to be critical in carrying out management responsibilities and achieving FCERM outcomes.</li> <li>●** Securing funding at the local scale is challenged by resource constraints and internal competition between FCERM projects and other corporate priorities.</li> <li>●** Access to funding contributions from other sectors/government departments is restricted by policy silos and misaligned funding cycles. This is particularly problematic for adaptation-based initiatives and is creating a sense of ‘limbo’ in certain areas (for example, Fairbourne).</li> <li>●** The significant weight assigned to protecting people and property means that funding criteria may not enable optimal benefits to be achieved.</li> <li>●** Knowledge gaps/challenges remain in terms of quantifying intangible benefits (for example, wellbeing).</li> </ul>


Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>●** There are resource gaps related to time, skills and capacities to conduct 'difficult conversations' and meaningful engagement in communities subject to adaptation.</li> <li>●** Limited resources in local authorities undermine participation in Coastal Groups.</li> <li>● The investment programme is still agreed on an annual basis (Welsh Government, 2020c), which was considered by some interviewees to be hindering longer-term planning. This is particularly the case for revenue funding, with interviewees calling for a longer-term settlement (this has also been consistently raised in inquiries; Auditor General for Wales, 2016; Public Accounts Committee, 2017).</li> <li>● Interviewees expressed concerns that the 3-year funding available through the Coastal Risk Management Programme is not enough to make efficiency savings.</li> <li>● According to the scoring criteria for full business cases, opportunities for partnership funding make up only 10% of the scoring system.</li> <li>● Multiple benefits are the least rewarded in FCERM funding criteria, making up 5% of the final score, based on a binary (yes/no) response and accompanying written description.</li> <li>● Marine licensing has been criticised for unnecessary bureaucracy and cost, especially for small-scale maintenance works on existing RMA assets.</li> <li>● According to the 2<sup>nd</sup> Climate Change Adaptation Plan more needs to be done to understand the costs and benefits of different adaptation options from the loss of coastal locations for businesses, to provide the means for early and cost-effective adaptation (Welsh Government, 2019e: 83).</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>●** Duties to cooperate and share information (for example, Flood and Water Management Act 2010 and Civil Contingencies Act 2004) are credited for improving collaboration between RMAs.</li> <li>●** Multi-agency planning for certain aspects of FCERM (such as incident planning) is the norm.</li> <li>●** There is a strong desire to collaborate expressed within the FCERM community, and wide recognition that no one organisation can achieve this alone. Strong working relationships are established within the FCERM community.</li> <li>● Collaboration forms one of the five ways of working in accordance with the sustainable development principle of the Well-being of Future Generations (Wales) Act 2015. This is a statutory requirement on public bodies. The Future Generations Commissioner has powers to encourage best practice and collaboration between public bodies (S19 of the Act).</li> <li>● Public Service Boards (PSB) at the local authority scale are intended to stimulate collaboration (albeit research suggests this role is not being maximised; Alexander and others, 2019).</li> </ul>





Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>● Area Statements have the potential to ‘bridge’ activities across public authorities and foster collaborative approaches.</li> <li>● Commitments to collaborate have been reinforced through a memorandum of understanding between NRW and Network Rail (October 2016).</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>●** Conflicting planning horizons can hamper opportunities to collaborate and integrate activities.</li> <li>●** For partnerships to develop and be successful there is a need to enhance understanding of ‘the other’ and increase awareness of the remits/constraints of other actors.</li> <li>●** Resources (especially time) are required for collaboration, yet are reportedly lacking.</li> <li>● There is a need for incentives to promote greater collaboration from other sectors/organisations outside the public sector.</li> <li>● Research suggests that Public Service Boards are not yet fulfilling their potential when it comes to connecting FCERM with other local initiatives. There is a need to increase awareness of the wide range of wellbeing benefits attached to FCERM activities, both within the FCERM community and beyond (such as push and pull messaging, as recommended by Alexander and others, 2019).</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>●** The broad range of strategies/measures promoted through the national FCERM strategy promotes integration with allied policy areas.</li> <li>●** The proposed Sustainable Farming Scheme has considerable potential to foster greater integration with FCERM (Welsh Government, 2019d).</li> <li>●** In spatial planning, LPAs are required to ‘have regard’ to local wellbeing plans, SMPs and the national FCERM strategy, which helps foster integration across policy areas.</li> <li>●** Drainage and Wastewater Management Plans (DWMPs) will promote integrated water management, catchment-based thinking and partnership working (Atkins, 2019).</li> <li>● Integration between FCERM and spatial planning is supported through specific policy instruments, including (strategic) flood consequence assessments and justification/acceptability planning tests.</li> <li>● Integration forms one of the five Ways of working in accordance with the sustainable development principle of the Well-being of Future Generations (Wales) Act 2015. This is a statutory requirement on public bodies.</li> <li>● Area Statements have the potential to ‘bridge’ activities across public authorities.</li> </ul>


Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>• There is policy synergy between FCERM and natural resources policy, with aligned goals around working with natural processes and supporting ecosystem-based resilience. For example, natural resources policy specifies nature-based solutions as a national priority, including the use of green infrastructure, coastal adaptation and enhancing/restoring floodplains.</li> <li>• Requirements to contribute to national wellbeing goals mean economic, environmental and social needs are being considered within FCERM schemes as part of ‘wider benefits’ within scoring criteria for funding.</li> <li>• Guidance on using the ‘Future Generations framework for projects’ (Future Generations Commissioner, 2018b) is intended to support the integration of wellbeing within other aspects of public policy, including FCERM.</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• ** Conflicting planning horizons and funding cycles can hamper opportunities to collaborate and integrate activities.</li> <li>• ** There remains a tendency towards budget, operational and specialist silos within national and local government.</li> <li>• ** Different spatial and temporal scales of planning documents can make integration difficult. In particular, the disjointedness between SMPs and local (development) plans was highlighted by interviewees and others (CCC, 2018).</li> <li>• ** Resource constraints limit opportunity and capacity for collaboration and integration.</li> <li>• ** Main actors within FCERM are regulated or overseen by different areas of government, with different (sometimes competing) agendas and priorities, which can make cross-sectoral integration difficult.</li> <li>• The absence of explicit wellbeing objectives and limited perspective on wellbeing goals within the national FCERM strategy could undermine the importance of integration and reinforce FCERM silo-thinking.</li> <li>• Considerations of climate change and FCERM within PSB (and sub-groups) appears to be ad hoc and opportunities to align FCERM with wider wellbeing goals are arguably not being maximised (Alexander and others, 2019).</li> <li>• There is scope to strengthen the role of Regional Flood Groups and their ability to support strategic activities in FCERM, as well as linking FCERM with wider regional agendas (such as economic growth: WLGA, 2018).</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• ** Climate change (and future flood risk) is firmly and routinely embedded within FCERM governance and decision-making.</li> </ul>



Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>●** Adaptive approaches are increasingly advocated for FCERM schemes.</li> <li>●** SMPs provide a long-term strategic vision for the coast and are informed by scientific evidence on future sea level rise. Coastal Groups play a crucial role in coastal governance to promote long-term thinking.</li> <li>●** Flood risk is a material consideration within spatial planning, with specific policy mechanisms in place to help ensure that (re)development does not increase flood risk now or in the future.</li> <li>●** Under the Planning and Compulsory Purchase Act 2004, development plans must include “policies designed to secure that the development and use of land in the local planning authority’s area contribute to the mitigation of, and adaptation to, climate change” (section 19(1A)).</li> <li>● Climate change allowances must be considered over the lifetime of proposed developments (via flood consequence assessment), following CL-03-16. These will be included in a Wales Flood Map to inform spatial planning decisions (Welsh government, 2019b).</li> <li>● Adopting a long-term perspective forms one of the five ways of working in accordance with the sustainable development principle of the Well-being of Future Generations (Wales) Act 2015. This is a statutory requirement on public bodies.</li> <li>● ‘Prosperity for all: A Climate conscious Wales’ was published 30 November 2019. This is the 2<sup>nd</sup> climate change adaptation plan and outlines a range of specific actions for long-term adaptation (Welsh Government, 2019e).</li> <li>● The National Habitats Creation Programme aims to offset the effects of FCERM works and coastal squeeze to establish compensatory habitat and mitigate the effects of ‘coastal squeeze’.</li> <li>● There are some good examples of adaptation strategies that adopt a long planning horizon to navigate coastal change management (for example, Fairbourne’s Framework for the Future; FMF, 2019).</li> <li>● There are statutory requirements to monitor the state of natural resources (Environment (Wales) Act 2016) and Future Trends (Well-being of Future Generations (Wales) Act 2015), which will inform decision-making.</li> <li>● Regulatory incentives are in place to encourage the sustainable management of natural resources and long-term planning in Welsh water companies. Furthermore, a long-term planning horizon is adopted by Welsh Water (‘Welsh Water 2050’ in Welsh Water, 2018) to inform 5-yearly AMP business planning.</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>●** Conflicting planning horizons across sectors can inhibit long-term planning and collaboration.</li> <li>●** Adaptation is essential, yet there are significant challenges to implementing adaptation schemes.</li> </ul>


Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>●** There is a lack of awareness of SMPs and poor accessibility to those outside of FCERM.</li> <li>● Whilst pragmatic, the Welsh National FCERM Strategy arguably lacks long-term ambition, with many measures focused on 2021/22. Adaptation is not an explicit objective in the revised strategy and Welsh Government has been criticised for lacking a sense of urgency to address adaptation challenges.</li> <li>● Many have been critical of the absence of climate change allowances from the development advice map, upon which the local development plans are based, although these concerns will be addressed through revisions to TAN15 (Welsh Government, 2019b).</li> <li>● Barriers to implementing the National Habitat Creation Programme must be addressed in order to keep pace with sea level rise – these are related to working with multiple landowners (with different priorities, planning horizons and remits of responsibility); navigating legal duties to maintain public rights of way and duties of care; reputational risks; and lack of awareness of the implications of SMPs.</li> <li>● Within the Five Ways of Working, a ‘long-term’ perspective is recommended as 25 years (Welsh Government, 2016e). However, the implementation of SMP2 policy change (particularly where this change will directly impact local communities) will require longer planning horizons.</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>●** Important FCERM-related legislation and policy requires public bodies to involve the public and work in partnership with communities.</li> <li>●** Under the Flood and Water Management Act 2010 LLFAs have a statutory duty to consult the public and other RMAs about the local FRM strategy, publish the strategy and issue guidance about how this will be applied in the local area.</li> <li>●** Community participation is routinely embedded within decision-making practices.</li> <li>●** There are a number of resources available for supporting community-based action, including dedicated community engagement officers within local authorities and NRW as well as support through the National Flood Forum.</li> <li>●** Online resources have been made available to help communities in planning for flooding (NRW, No date(a); 2010).</li> <li>● Involvement forms one of the five ways of working in accordance with the sustainable development principle of the Well-being of Future Generations (Wales) Act 2015. This is a statutory requirement on public bodies. It is further stated that interested persons should reflect the diversity of the area which the public body serves.</li> <li>● Research has been commissioned to advance learning around stakeholder engagement in Wales to improve this process (for example, JBA Consulting and Icarus, 2016; NFF and CEP, 2018).</li> </ul>

Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>• The concept of ‘placemaking’ in Planning Policy Wales emphasises inclusive participation.</li> <li>• Considerable efforts have been within the FCERM community to support the education of children and young adults to enhance risk awareness (NRW, 2019a; Alexander and others, 2019).</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>•** The capacity, ability and willingness of communities to be involved is variable between places.</li> <li>•** Local involvement often relies on certain individuals who have the time, confidence and skills to input. This raises questions about representativeness.</li> <li>•** A shortfall in personnel and financial resources limits capacity for engagement.</li> <li>•** Training and capacity building will be required if alternative forms of engagement are to be embraced (Kelly and Kelly, 2019).</li> <li>•** Flexibility in how engagement is achieved may be leading to differences in the effectiveness of participation.</li> <li>• Research has highlighted the tendency of FCERM projects to adopt limited forms of consultation. Proactive, meaningful and sustained engagement and relationship building with communities is needed.</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>•** The UK Climate Change Risk Assessment (as required by the Climate Change Act 2008) informs climate change mitigation and adaptation planning (ASC, 2016; HM Government, 2017).</li> <li>•** Ongoing investment and participation in the Defra/Environment Agency WG/NRW R&amp;D Programme.</li> <li>•** Opportunities for sharing good practice are provided through leading networks/groups (for example, coastal groups, Flood &amp; Coast annual conference).</li> <li>•** Local development plans are underpinned by strategic flood consequence assessments.</li> <li>• The newly-established Wales Coastal Monitoring Centre provides a strategic, coordinated approach to coastal monitoring and provides data to support evidence-based decision-making (including topographic surveys).</li> <li>• The new Flood Risk Assessment for Wales (FRAW) provides a national assessment of all sources of flooding (including areas benefitting from flood defences) and informs various aspects of decision-making (updated annually) (this replaces the former NaFRA). This will underpin decision-making and steer investment.</li> <li>• The Communities at Risk Register informs the FCERM programme and funding allocations.</li> <li>• UK Climate Projections form the basis of the national climate change adaptation plan; Welsh Government will publish an updated version</li> </ul>

Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>of 'Climate Change: Its impacts for Wales' (based on UKCP18 data) in due course.</p> <ul style="list-style-type: none"> <li>• Welsh Ministers must publish a 'Future Trends Report' under the Well-being of Future Generations (Wales) Act 2016. The report contains predictions of future wellbeing trends and takes into account the UK Climate Change Risk Assessment. (Welsh Government, 2017). Local wellbeing assessments by PSBs must also take into account the UK Climate Change Risk Assessment. Flooding is also included within the 46 national wellbeing indicators as part of national monitoring.</li> <li>• Under the Environment (Wales) Act 2016 NRW must update and publish the 'State of Natural Resources Report' (SoNaRR) every 5 years. This provides a national baseline for the sustainable management of natural resources to inform decision-making and natural resources policy.</li> <li>• Climate change allowances are included in specific guidance for spatial planning (Circular CL-03-16) and will soon be included in the Wales Flood Map (due to replace the current development advice map).</li> <li>• Environment Platform Wales (established in 2019) brings interdisciplinary researchers and policymakers together to improve the quality and relevance of evidence for environmental policy.</li> <li>• Section 19 reports are promoted as crucial evidence to support business cases for future FCERM investment.</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>•** Evidence gaps remain in terms of quantifying the benefits of catchment/area-based approaches, particularly natural flood management (NFM) and other intangible benefits for wellbeing.</li> <li>•** Better evidence in relation to the benefits of working together are needed to support collaborative working.</li> <li>•** Establishing confidence in working with natural processes/NFM and catchment-based approaches requires around 3 to 5 years of evidence and ongoing monitoring to establish their effectiveness at mitigating flood risk, yet resource constraints could restrict monitoring.</li> <li>• There is no long-term commitment to the Wales Coastal Monitoring Centre, which is funded until 2022 at this point in time.</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>•** Various accountability and assurance mechanisms are established.</li> <li>•** There is periodic scrutiny of FCERM via the Auditor General for Wales and Public Accounts Committee (with main reports in 2009, 2016 and 2017).</li> <li>•** Section 18 reporting mechanism (as required under the Flood and Water Management Act) via NRW (NRW, 2014c; 2016a; 2019a).</li> </ul>

Process-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>Further scrutiny of this has been assigned to the (national) Flood and Coastal Erosion Committee.</p> <ul style="list-style-type: none"> <li>●** Section 19 reports (as required under the Flood and Water Management Act) investigate specific flood incidents and whether RMAs have fulfilled their duties.</li> <li>●** Local authority overview and scrutiny committees may scrutinise FCERM activities.</li> <li>●** Safeguards are in place to minimise inappropriate development, including notification directions and call-in powers.</li> <li>●** Legal processes exist for challenging decisions and holding public actors to account (for example, judicial review), albeit access to these mechanisms are affected by the ability to bring about court proceedings.</li> <li>●** There is a clear and consistent process for FCERM investment which provides transparency.</li> <li>●‘Prosperity for All: A Climate Conscious Wales’ (the 2<sup>nd</sup> adaptation plan for Wales) outlines specific actions to ensure progress is accountable. Welsh Government will report progress every 2 years (Welsh Government, 2019e).</li> <li>●Specific measures are outlined in the national FCERM strategy, for example, Coastal Groups will be required to submit annual progress reports on SMP2 Action Plans.</li> </ul>
	<p><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>●** There was some concern that collaboration and partnership working could potentially dilute accountability and blur the boundaries of responsibility. Responsibilities (and associated liabilities) need to be clear.</li> <li>●** Enforcement in spatial planning should be improved to ensure that flood-related conditions are being effectively implemented.</li> <li>●** Responsibilities for coastal adaptation are obscure and appear to be slipping through the gaps created by siloed governance. The lack of clarity has implications for holding actors to account.</li> <li>●Recent case law has called into question the ‘statutory teeth’ of the Well-being of Future Generations (Wales) Act 2016 and appropriateness of judicial review for holding public bodies to account.</li> <li>●Resource constraints appear to be limiting LPA-returns of information related to spatial planning decisions in high flood risk areas.</li> </ul>

**Table C2: Outcome-based evaluation of FCERM governance in Wales<sup>2</sup>**


Outcome-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
 <p>Societal resilience</p>	<p><b>STRENGTHS</b></p> <p><b>Cross-cutting</b></p> <ul style="list-style-type: none"> <li>•** A holistic risk-based and diversified approach is adopted and well established in FCERM.</li> </ul> <p><b>Preparedness</b></p> <ul style="list-style-type: none"> <li>•** Well-established flood warning systems are in place, with continued improvements and wider coverage to extend lead time for action. Dissemination is promoted through multiple push and pull channels, with opt out systems leading to higher coverage. The Flood Warnings Direct service has over 120,000 registered users, with 3 mobile operators now added to the service (NRW, 2019a).</li> <li>•** There is a clear framework for flood emergency management, reinforced through the Wales Flood Response Framework (Welsh Government, 2016g).</li> <li>• A new flood forecasting system has been established within NRW, with increasing coverage of locations (NRW, 2019a).</li> </ul> <p><b>Awareness, empowerment and recovery of local communities</b></p> <ul style="list-style-type: none"> <li>•** Increasing emphasis on working with communities and empowering household and community action, with specific roles to facilitate this within some organisations as well as supporting mechanisms (for example, community flood plan guidance). Within the last reporting period, 342 flood plans had been produced through partnership working between NRW, LLFA and 280 volunteers (NRW, 2016a), with 74 plans currently active (NRW, 2019).</li> <li>•** Considerable efforts have been made to improve consistency and access to flood information among communities and other FCERM professionals.</li> <li>•** Advice and support for local communities is available from the National Flood Forum.</li> <li>•** There is high insurance penetration in general. Flood Re is ensuring access to affordable home insurance in high-risk areas.</li> <li>•** Flood Re emphasises the need to 'build back better' and permits the payment of claims which include a limited amount of resilient and/or resistant repair, above and beyond the flood-related loss (Flood Re, 2019: 11).</li> </ul>

<sup>2</sup> **Outcome** refers to the implementation of the decision-making process and whether the intended goal was achieved.





Outcome-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>● Flood Awareness Wales has been a central pathway for enhancing awareness, as well as promoting community flood planning (Collingwood Environmental Planning, 2016).</li> <li>● Educational outreach activities and tailored flood advice (for example, for students, landlords) is available (see NRW, 2019a).</li> <li>● The emergency flood relief scheme has been made available to provide immediate financial support to flood-affected householders and flood relief for businesses (although this does not cover the costs for property flood resilience measures).</li> </ul> <p><b>Minimising exposure via spatial planning</b></p> <ul style="list-style-type: none"> <li>● ** Policy triggers are in place to minimise inappropriate development in at-risk areas (for example, justification and acceptability tests). LPAs must ‘take account of’ SMPs and should avoid inappropriate development in vulnerable locations.</li> <li>● ** Efforts have been made to improve the uptake of property-level flood resilience measures, including The Bonfield Report/Property Flood Resilience Action Plan (Defra, 2016) and a Code of Practice for Property Flood Resilience (CIRIA, 2019).</li> <li>● ** The eligibility requirements of Flood Re mean that only properties built before 2009 may be entered into the scheme, therefore maintaining this additional mechanism for deterring development away from at-risk areas.</li> <li>● Stronger emphasis on minimising exposure through spatial planning, with significant improvements proposed through revised TAN 15 (Welsh Government, 2019b), which address many of the current weaknesses, including the merger with TAN 14 (coastal planning), the Development Advice Map to be replaced with NRW Wales Flood Map, extended advice of flood resilient development, and a stronger emphasis on strategic flood consequence assessments for LDPs.</li> <li>● Implementation of SuDS Approval Bodies (SABs) in January 2019, requiring SuDS applications for new developments and compliance with statutory standards (Welsh Government, 2018c).</li> </ul> <p><b>Implementing alternative approaches</b></p> <ul style="list-style-type: none"> <li>● ** Pilots (for example, Flood Resilience Pathfinder initiatives; Defra and others, 2015) have begun to consider longer-term adaptation needs and examine appropriate governance mechanisms for this.</li> <li>● ** Research has been commissioned through the R&amp;D programme to provide behavioural insights for understanding the uptake of property flood resilience and priority areas for future research (Park and others, 2020).</li> <li>● Welsh Government commissioned the Fairbourne Learning Project (October 2015 to August 2018) to identify important lessons from past and future public engagement around coastal change management (Bennett-Lloyd and others, 2019; Priest and others, 2020). These lessons will inform the Coastal Adaptation Toolkit/guidance expected in 2022.</li> </ul>

Outcome-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p><b>Weaknesses</b></p> <p><b>Cross-cutting</b></p> <ul style="list-style-type: none"> <li>•** There are calls for a longer-term commitment to revenue/resource funding to support a wider range of FCERM activities.</li> </ul> <p><b>Preparedness</b></p> <ul style="list-style-type: none"> <li>•** Recent R&amp;D research suggests that the level indicators used in flood alerts are not widely understood and found that impact information would better aid public decision-making and actions (Blazey and McCarthy, 2020). These findings are being considered by the Environment Agency/Natural Resources Wales.</li> </ul> <p><b>Awareness, empowerment and recovery of local communities</b></p> <ul style="list-style-type: none"> <li>•** Criticism that community engagement focuses too heavily on outputs (such as community flood plans), as opposed to recognising the importance of the process itself (NFF and CEP, 2018).</li> <li>•** Engaging and empowering communities on matters of adaptation requires alternative ways of working, meaningful engagement (not consultation) and building relationships and capacity within communities to act. However, sustained engagement will require adequate resourcing. RMAs have reported difficulties in raising awareness/engaging people in the response to flood and coastal erosion risks, due to resource constraints (NRW, 2019a).</li> <li>•** Limitations related to Flood Re are discussed under <b>Social Equity</b>.</li> <li>• There is no established framework for initiating recovery grant schemes (as there is in England).</li> </ul> <p><b>Implementing alternative approaches</b></p> <ul style="list-style-type: none"> <li>•** Various barriers are restricting the implementation of adaptation schemes, particularly on the coast.</li> <li>•** FCERM funding criteria have been criticised for having a narrow view of 'benefit', which has constrained funding for alternative measures/schemes.</li> <li>• Investment in property flood resilience/resistant measures has been limited (NRW, 2019a).</li> <li>•** Significant uptake of property-level resilience has been slow. It was felt that clear strategies are missing to incentivise change at the household level and that approaches need to become more normalised.</li> </ul> <p><b>Minimising exposure via spatial planning</b></p> <ul style="list-style-type: none"> <li>•** Poor enforcement in spatial planning is attributed to the lack of resources and capacity within LPAs. As a result, a reactive approach to compliance checking appears to have been established.</li> <li>•** Interviewees reflected on the lack of accountability attributed to developers themselves. Rather than risks being simply passed onto</li> </ul>

Outcome-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>homeowners, it was argued that developers should also retain some responsibility and liability, which may further help to improve compliance with planning conditions.</p> <ul style="list-style-type: none"> <li>•** Building Regulations have remained unchanged, despite recommendations in the Pitt Review that this would be “the simplest way of ensuring that appropriate flood resilient measures are taken” (Pitt, 2008: 76). Part C relates to ‘Site preparation and resistance to contaminants and moisture’ and Part H (Drainage and water disposal) are the most relevant.</li> <li>• There are numerous criticisms of current spatial planning policy related to flood and coastal erosion risk, for example, the Development Advice Map excludes surface water and climate change allowances, and uses different flood zones and thresholds to NRW’s Flood Map. There has also been criticism about the artificial distinction between C1/C2 flood zones, and neglect of residual risks in zone C1. These criticisms remain valid until a revised TAN15 is formally adopted.</li> <li>• There has been a documented rise in the number of planning permissions granted in flood zone C.</li> </ul>
	<p><b>Strengths</b></p> <p><b>Mitigating the likelihood and magnitude of flood hazards (fluvial and coastal)</b></p> <ul style="list-style-type: none"> <li>•** Increasing emphasis on natural flood management and hybrid approaches (for example, green-grey infrastructure), in addition to defences, to mitigate flood likelihood and magnitude (while providing other ecosystem services/benefits).</li> <li>•** Adaptive management approaches are advocated.</li> <li>• Medium-term capital commitments of funding via the FCERM programme and Coastal Risk Management Programme, and stability of capital funding, means schemes have been/are being implemented.</li> <li>• Alignment with other agendas (for example, economic growth) has enabled certain defence and mitigation schemes to progress (for example, West Rhyl coastal defence scheme).</li> <li>• Small Scale Work Grant provides easier access to funding for maintenance and NFM approaches.</li> </ul> <p><b>Asset maintenance</b></p> <ul style="list-style-type: none"> <li>•** Inspection and maintenance regimes are established.</li> <li>•** Third party structures, which help to manage flood or coastal erosion risk, may be designated under the Flood and Water Management Act to prevent them being altered, removed or replaced without consent. This helps to ensure they continue to work as an FCERM asset and the owner does not inadvertently increase risk to themselves, their neighbours or surrounding area (see Defra and Welsh Government, 2012).</li> </ul>

Outcome-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>• There has been progress on the National Asset Database (initiated in 2016), providing an overview of asset ownership (NRW and local authorities (LA)) and condition across Wales (this is managed by NRW as part of its strategic oversight role). Specific measures are outlined in the national FCERM strategy to ensure completion of the database by the end of 2020 and to enable LAs to input data on their own assets by the end of 2021.</li> <li>• Current asset performance figures for NRW-owned assets indicate that 98% meet target condition (as of March 2019; NRW, 2019a).</li> <li>• Emergency grant funding is made available for repairs following storm events. Between April 2016 and March 2019, Welsh Government provided around £1.9 million (NRW, 2019a).</li> </ul> <p><b>Surface water management</b></p> <ul style="list-style-type: none"> <li>• New requirements for SuDS approval for future developments to prevent surface water risks from worsening. SuDS Approval Bodies (SABs) were established in January 2019, with NRW and water companies acting as statutory consultees.</li> <li>• Progress towards ‘rainscaping’ urban centres and implementing SuDS within the water sector (for example, Greener Grangetown scheme).</li> </ul>
	<p><b>Weaknesses</b></p> <p><b>Mitigating the likelihood and magnitude of flood hazards (fluvial and coastal)</b></p> <ul style="list-style-type: none"> <li>• ** Concerns were raised about the lack of revenue funding to support a range of FCERM activities, including defence maintenance, which could undermine the integrity of the defence network.</li> <li>• ** A coherent strategy (and mechanisms) for incentivising private sector involvement and generating new funding streams is lacking.</li> <li>• ** Evidence gaps remain around the effectiveness of NFM and catchment-wide schemes in terms of flood mitigation benefits.</li> <li>• A clear national picture is lacking about how many properties benefit from FCERM schemes – this is highlighted in the national FCERM strategy as a specific action for NRW (Welsh Government, 2020a).</li> <li>• The loss of European funding could be problematic – input from EU funding has been attributed to reducing risk to 8,800 homes and businesses across Wales (Welsh Government, 2020a).</li> </ul> <p><b>Asset maintenance</b></p> <ul style="list-style-type: none"> <li>• Concerns have been raised about the lack of standardised systems for prioritising flood asset maintenance, though this will be addressed through the National Asset Database (NRW, 2019a).</li> </ul> <p><b>Surface water management</b></p> <ul style="list-style-type: none"> <li>• It is too early to establish the effectiveness of SABs and their effectiveness in terms of surface water mitigation, although LLFAs</li> </ul>

Outcome-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>have reported challenges in establishing the SAB and providing this service with no additional resources (NRW, 2019a).</p>
	<p><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>●** Increasing emphasis on nature-based solutions, linked to other ecosystem services and benefits (for example, drought mitigation, carbon sequestration/storage, water quality, amenity, health). The ambition of trying to achieve multi-benefits is considered to be mostly routine and there is a clear willingness to realise multi-benefit schemes.</li> <li>●** Opportunities for aligning FCERM and land use management via the proposed Sustainable Farming Scheme could help provide a wider range of ecosystem services, including flood mitigation.</li> <li>● The introduction of SABs and statutory standards/guidance for SuDS was viewed positively by interviewees as a means of ensuring consistency and achieving better outcomes for FCERM, water quality and the environment.</li> <li>● FCERM business case guidance promotes alignment with wider national wellbeing goals (Welsh Government, 2019c).</li> <li>● Schemes such as Colwyn Bay waterfront and West Rhyl Coastal Defence Scheme have boosted local economies, benefitting tourism and local businesses.</li> <li>● Schemes have helped support the Active Travel agenda (Welsh Government, 2016c) – for example, the Swansea Vale Flood Storage Area is highlighted as a successful multi-beneficial scheme, which included upgrading 3km of the national cycle network (see Welsh Government, 2020a: 54).</li> <li>● Biodiversity benefits are supported through NFM approaches, for example, habitat creation at Cwm Ivy Marsh (North Gower) aims to create 39 hectares of new compensatory saltmarsh habitat and provide various ecosystem services associated with saltmarsh habitat (for example, carbon sequestration).</li> <li>● ‘Area trials’ for natural resource management were carried out in 2014 – for example, in Rhondda, a project for working with nature to restore the natural water environment saw the restoration of upland peatland (at Cwmparc), as well as the installation of in-channel woody debris and brushwood fascines to provide flood attenuation, carbon storage, water quality and biodiversity benefits (NRW, No date (b); National Assembly for Wales, 2019).</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>●** FCERM funding prioritises the protection of people and property, which makes other benefits harder to justify. Multiple benefits are the least rewarded in FCERM funding criteria.</li> <li>●** Approaches for measuring different types of benefits were considered to be lacking. Moreover, additional benefits may emerge</li> </ul>

Outcome-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>over different time periods and be difficult to quantify, yet funding often demands high levels of outcome certainty.</p> <ul style="list-style-type: none"> <li>●** 'Buy in' from other areas of government was seen to be critical to the success of realising multi-benefit approaches. However, further engagement is required to maximise emerging windows of opportunity (for example, Drainage and Wastewater Management Plans and the Sustainable Farming Scheme).</li> <li>●** Adaptive approaches require integrated solutions yet siloed governance appears to be a barrier to this.</li> <li>●** Recurrent barriers to cross-sectoral/departmental working included aligning planning cycles, conflicting priorities/agendas and different approaches to measuring benefit.</li> <li>●** Considerable uncertainties remain with regards to the Sustainable Farming Scheme and how this will work in practice, alongside FCERM.</li> <li>● Opportunities to align FCERM with wider wellbeing goals are arguably not being maximised (Alexander and others, 2019).</li> </ul>
	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>●** Partnership working is promoted within FCERM and effective working relationships are being established; this is seen as essential for achieving FCERM activities.</li> <li>●** Understanding roles and responsibilities has improved since the implementation of the Flood and Water Management Act 2010.</li> <li>● Partnership working is evident in the development of FRM plans, schemes, awareness raising activities and multi-agency emergency response exercises (for example, Exercise Megacyma in 2015 tested the strategic response for widespread coastal flooding in South Wales).</li> <li>● Partnership working is reinforced through the five ways of working outlined in the Well-being of Future Generations (Wales) Act 2015, including integration and collaboration.</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>●** Recurrent barriers to effective partnership working include resource (financial and personnel) constraints and conflicting priorities.</li> <li>● There is scope for improving/developing opportunities for partnership working with non-RMAs and non-public bodies.</li> <li>● There were some concerns that the strategic oversight role of NRW lacked clarity (although this has improved through latest national FCERM strategy).</li> <li>● Also see barriers outlined under <b>Collaboration and Integration</b>.</li> </ul>



**Table C3: Impact-based evaluation of FCERM governance in Wales<sup>3</sup>**

Impact-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
<div data-bbox="178 315 336 412" style="background-color: #004a7c; color: white; padding: 5px; border-radius: 5px; text-align: center;">Resilient places</div>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• Also see <b>Societal resilience</b> and <b>Hazard reduction</b> criteria.</li> </ul> <p><b>The impact of hazard reduction</b></p> <ul style="list-style-type: none"> <li>• The Wales Coastal Review estimated that the protection afforded by the defence and asset network amounted to avoided damages of £960 million (December 2013 floods) and £2 billion (January 2014 floods) (NRW, 2014a).</li> <li>• In the period 2010 to 2015, £240 million of Welsh Government investment reduced the risk to 12,000 homes and businesses (Welsh Government, 2019a). Within the current government term (2016 to 2021) around £350 million of capital and revenue funding has been invested in FCERM.</li> <li>• Implementation of the £150 million CRMP will benefit over 18,000 properties once all schemes are completed (NRW, 2019a).</li> </ul> <p><b>Preventing inappropriate development</b></p> <ul style="list-style-type: none"> <li>• Proposed revisions to TAN 15 (Welsh Government, 2019b), if accepted, will strengthen the role of spatial planning in minimising inappropriate development and promoting flood resilient development to improve place-based resilience.</li> </ul> <p><b>Reducing surface water flood risks</b></p> <ul style="list-style-type: none"> <li>• The introduction of SABs means there is a statutory requirement for developers to consider and plan for surface water mitigation (Welsh Government, 2018c). SuDS are treated as an integral part of development design, applicable to new developments of more than one dwelling, or where the area covered equals or exceeds 100 square metres.</li> </ul> <p><b>Promoting (resilient) recovery</b></p> <ul style="list-style-type: none"> <li>• ** Flood Re ensures access to affordable insurance in high risk areas. According to the latest update, Flood Re is now offered through 90% of the home insurance market, benefitting nearly 250,000 properties across the UK (Flood Re, 2019), of which 20,287 properties in Wales could benefit from the scheme (NRW, 2016). Figures indicate that over 9,500 households have benefitted as of 2018 (NRW, 2019a).</li> </ul>

<sup>3</sup> **Impact** refers to the combined effect of governance processes and outcomes, and extent to which desired results are achieved.

Impact-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>• Efforts are being made to develop options for relocating people, property and infrastructure from coastal areas subject to future 'managed realignment' or 'no active intervention' policies outlined in SMP2 – such as 'Fairbourne Framework for the Future' (FMF, 2019).</li> </ul> <p><b>Weaknesses</b></p> <p><b>Preventing inappropriate development</b></p> <ul style="list-style-type: none"> <li>• ** Resource constraints are severely restricting compliance checking and enforcement in spatial planning.</li> <li>• There has been a documented rise in the number of planning permissions granted in zone C (although inconsistencies in LPA reporting is an issue; JBA, 2017).</li> </ul> <p><b>Surface water management</b></p> <ul style="list-style-type: none"> <li>• It is too soon to evaluate the effectiveness of SABs and their role in mitigating surface water flood risks.</li> </ul> <p><b>Promoting (resilient) recovery</b></p> <ul style="list-style-type: none"> <li>• ** Flood Re has maintained the continued availability of insurance for many properties, but some properties are excluded (for example, small businesses). There is a risk that the presence of the scheme could reduce the sense of urgency required, and even disincentivise risk mitigation as financial incentives have been removed.</li> </ul> <p><b>Uptake of property-level measures</b></p> <ul style="list-style-type: none"> <li>• ** Significant uptake of property-level resilience has been slow.</li> <li>• Investment has been limited to date (NRW, 2019a) - according to ASC (2016), around £850,000 from NRW has been directed towards property-level measures since 2010/11, benefitting over 600 properties.</li> </ul> <p><b>Barriers to implementing alternative approaches</b></p> <ul style="list-style-type: none"> <li>• ** There is an adaptation implementation gap, which is driven by gaps in funding and responsibilities, prohibitive legislation (for example, Highways Act 1980), the non-statutory status of SMPs, and lack of strategic/practical guidance or policy instruments.</li> </ul>
<div data-bbox="177 1727 336 1821" style="background-color: #00a651; color: white; padding: 5px; border-radius: 10px; display: inline-block;">Resilient growth</div>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>• ** Mechanisms are in place to minimise disruption to businesses and facilitate preparedness/recovery, including i) duties under the Civil Contingencies Act 2004, whereby local authorities are required to advise and assist local businesses and voluntary organisations to help them plan for emergencies and support the continuation of their activities, ii) support for small/medium scale businesses via the Prince of Wales Business Emergency Resilience Group, including</li> </ul>

Impact-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>emergency planning guidance, and iii) the Business Continuity Management Toolkit developed by the UK government.</p> <ul style="list-style-type: none"> <li>●** Welsh Government is working with Highways England in setting new standards on climate change for road transport to help ensure flood resilience. This will include the publication of a design manual for roads and bridges and environment advice notes.</li> <li>●** Network Rail has developed route-based weather resilience and climate change adaptation plans (Network Rail, 2019). This includes a vulnerability and impact assessment (currently based on UKCP09 data).</li> <li>● In spatial planning, resilient development is supported through pre-application discussions, as well as mandatory pre-application consultations for major developments with the community and specialist consultees (including NRW).</li> <li>● A companion guide is proposed for advising developers, householders and landlords on adapting properties to be resilient to climate change (Welsh Government, 2019e).</li> <li>● The National Development Framework (NDF) (published in 2020) established a spatial strategic plan, setting out the types/location of (nationally significant) development and infrastructure required over the next 20 years to enable sustainable growth as well as mitigating and building resilience to climate change impacts. The NDF asserts the importance of coordinating development decisions with strategic decisions on FCERM.</li> <li>● Resilient growth is factored into coastal adaptation decision-making – for example, the relocation of the A487 in Newgale (Pembrokeshire County Council, 2018).</li> <li>● High-profile schemes such as Colwyn Bay have supported local and regional economic growth (with funding received via Welsh Government’s regeneration Programme, ‘Vibrant and Viable Places’, and the European Regional Development Fund).</li> <li>● A Climate Change Adaptation Business Tool is available for the tourism sector (Welsh Government, 2019e).</li> <li>● Measures are outlined in the 2<sup>nd</sup> Climate Change Adaptation Plan to better support businesses to adapt, such as providing 1-2-1 business advice to companies to develop adaptation plans and using the Business Wales online platform to raise awareness of climate change adaptation and provide advice (Welsh Government, 2019e).</li> </ul>
	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>●** UK research suggests that business continuity planning is highly variable and often developed in larger companies only (ASC, 2014; Welsh Government, 2019e).</li> <li>●** Small businesses are excluded from Flood Re.</li> <li>●** The UK Adaptation Reporting Power (under the Climate Change Act 2008) is now voluntary, with calls for mandatory reporting (CCC, 2017).</li> </ul>

Impact-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>●** There is a need for better engagement with different service providers across sectors to ensure appropriate planning for future flood risk and minimise network disruption.</li> <li>●Welsh Government’s 2<sup>nd</sup> climate change adaptation plan outlines specific research needs (and sets standards) for adaptation for road transport, in conjunction with Highways England. However, risks to infrastructure (from all sources of flooding) is highlighted as an urgent area where more action is needed (Welsh Government, 2019e).</li> <li>●Infrastructure emergency response processes are in development to strengthen preparedness (with a pilot in Dyfed-Powys), but not yet rolled out across Local Resilience Forums (Welsh Government, 2019e).</li> <li>●Further work is required to ensure businesses have access to the incentives, tools and information needed to be able to adapt (Welsh Government, 2019e: 83).</li> <li>●There is scope to strengthen the role of Regional Flood Groups and their ability to support strategic activities in FCERM, as well as linking FCERM with wider regional agendas (such as economic growth: WLGA, 2018).</li> </ul>
<div data-bbox="178 1025 335 1115" style="background-color: #00b050; color: white; padding: 5px; border-radius: 10px; display: inline-block;">Adaptive capacity</div>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>●Also see points raised under <b>Long-term sustainability</b>.</li> <li>●**Post-event reviews and learning from events is routine within FCERM, for example, the Wales Coastal Flood Review in 2015 led to 47 recommendations and a Delivery Plan published by NRW (NRW, 2014a,b; 2015; 2016c).</li> <li>●** Section 18 and 19 reporting (as mandated through the Flood and Water Management Act 2010) provide useful opportunities for learning.</li> <li>●** Different planning epochs are considered for short-term (0-20 years), medium term (20-50 years) and long term (50-100 years) within SMPs, to take account of sea level rise and inform long-term planning.</li> <li>●** Flood risk management plans produced by LLFAs are reviewed on a 6-yearly cycle (under the Flood Risk Regulations 2009).</li> <li>●** Flood Re’s Transition Plan outlines a vision to ‘build back better’, including supporting research into standards for property-level measures.</li> <li>●Long-term planning horizons have been outlined in prominent locations subject to future policy change (for example, FMF, 2019) and the concept of adaptation/adaptive pathways is embedded in planning documents, whereby important triggers for decision-making are outlined, while retaining the necessary flexibility required to integrate new evidence and emerging trends.</li> <li>●Opportunities for innovation and experimentation are encouraged. New experimental powers are granted within the Environment (Wales) Act 2016 and assigned to NRW to develop management</li> </ul>

Impact-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<p>techniques to improve ecosystem resilience and trial new approaches for the sustainable management of natural resources.</p> <ul style="list-style-type: none"> <li>• Within the proposed changes to TAN 15 (Welsh Government, 2019b), the threshold frequency to which new developments must be designed to be 'flood free' now includes allowances for climate change, alongside more assertiveness that these frequency thresholds 'must be met for different types of development'. Climate change allowances will also be embedded in the Wales Flood Map to inform development planning and justification/acceptability mechanisms.</li> <li>• Welsh Government's 2<sup>nd</sup> climate change adaptation plan indicates adaptation (not just mitigation) is rising up the political agenda (Welsh Government, 2019e). Continued defence, spatial planning and Area Statements are highlighted as important mechanisms for driving adaptation over the next 5 years and beyond.</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>• ** SMP2 are unfunded proposals only. Implementing SMP2's 'Hold the line' policies will require significant funding contributions, rising from £20 million to £30 million annually over the next 50 to 100 years (Auditor General for Wales, 2016; 11).</li> <li>• ** Legislative rigidity is a significant barrier to implementing adaptation initiatives, particularly with regards to the Highways Act 1980 and duties to maintain public rights of way.</li> <li>• ** There is a risk that Flood Re is seen as the panacea and may undermine the sense of urgency required to ready communities for risk-reflexive pricing.</li> <li>• Welsh Government has been criticised for lacking a sense of urgency when it comes to addressing coastal adaptation – for example, a coastal adaptation toolkit/guidance promised in 2015 continues to be delayed. There have been calls for more strategic guidance to support adaptation at the local scale.</li> <li>• Whilst opportunities for innovation/experimentation are called for, actual implementation of these is limited. The Coastal Risk Management Programme has been criticised for funding traditional defence-based approaches, rather than adaptation-based initiatives.</li> <li>• The Climate Change Act 2008 gives discretionary reporting powers to Ministers to require public bodies to report on adaptation-based actions. Currently, Welsh Government relies on existing reporting arrangements via the Well-being of Future Generations (Wales) Act 2016 and intends to monitor this before deciding whether to invoke reporting powers (Welsh Government, 2019e). There is a potential risk that adaptation is not given the priority it requires – indeed, adaptation is not a priority area for action outlined by the Future Generations Commissioner (2018a).</li> </ul> <p><b>Strengths</b></p>

Impact-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
<div data-bbox="193 280 331 371" style="background-color: #d4c03e; border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;">Social Equity</div>	<ul style="list-style-type: none"> <li>●** Mechanisms are in place to address the needs of vulnerable groups in emergency response.</li> <li>●** Flood Re aims to continue to maintain the affordability of flood insurance, and therefore extends principles of solidarity between all those with an insurance policy.</li> <li>● Allocations of FCERM funding are risk-based and weighted according to the Communities at Risk Register, which is widely regarded as a fair approach.</li> <li>● The funding formula does not penalise schemes where partnership contributions are severely limited.</li> <li>● Principles of justice and fairness are embedded in the 2<sup>nd</sup> climate change adaptation plan.</li> <li>● An Equal Wales is one of the national wellbeing goals to which public bodies must contribute.</li> </ul> <p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>●** It is too soon to evaluate how Flood Re will support a just transition to risk-reflective pricing. The gradual rise in premiums towards risk-reflective levels, may ultimately impact upon penetration, and there will be some residents who will be unable to afford to reduce their flood risk.</li> <li>●** FCERM funding formula inadvertently favours defence-based approaches and the protection of people/property, which limits access to funding for other communities/different types of schemes.</li> <li>● The movement towards partnership-based funding could advantage certain communities over others (see evaluation points raised for England in Appendix B).</li> <li>● Equity and justice debates need to be acknowledged when designing/implementing adaptation initiatives to ensure ‘just transitions’. However, this is currently lacking at the national scale and has not been explicitly mentioned in FCERM policy.</li> </ul>
<div data-bbox="180 1550 336 1641" style="background-color: #e67e22; border: 1px solid black; border-radius: 10px; padding: 5px; text-align: center;">Acceptability</div>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>●** There is a strong sense of shared ownership/responsibility within the FCERM community.</li> <li>●** Community consultation and engagement is embedded in FCERM practice.</li> <li>●** There are successful examples at the local scale of effective community engagement, where efforts are being made to establish trust and ownership in FCERM matters.</li> <li>●** There is often assurance that the most cost-effective approach has been adopted (although this is not necessarily the most acceptable or preferred option).</li> </ul> <p><b>Weaknesses</b></p>



Impact-based criteria	Main strengths and weaknesses identified from interviews and document analysis: Wales
	<ul style="list-style-type: none"> <li>●** Some communities are better equipped and able to input into FCERM decision-making and realise actions. This is likely to affect views on acceptability. It is also important to recognise that community acceptance of FCERM approaches is dynamic and may vary over time.</li> <li>●** Community satisfaction in FCERM decision-making is variable and depends on levels of engagement, whether communities felt listened to, and whether they received investment to reduce and/or manage risk.</li> <li>● Interviewees (operating at the local scale) expressed concern that there needs to be a united front across RMAs and Welsh Government, and honest communication with the public around adaptation matters.</li> <li>● Media coverage around prominent examples (namely Fairbourne) indicates dissatisfaction with the outcomes of SMP2. The local community in Fairbourne also tried to launch a judicial review against the Council/SMP2 to challenge the decision. Welsh Government-commissioned research attributed this to failings in the SMP2 consultation process (JBA and Icarus, 2016). The importance of sustained and meaningful engagement has been highlighted, but this is resource-intensive.</li> </ul>