



Adaptation and social justice

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This briefing provides advice on the linkages between climate adaptation and social justice.

(a) Social justice goals in Wales

The Welsh Government commissioned the Committee to provide advice on “managing the interrelationships between climate change adaptation and social justice” alongside our first independent assessment of the Welsh national adaptation programme (Prosperity for All: A Climate Conscious Wales).

This briefing builds on the [Committee's previous work](#) considering how adaptation to a changing climate links to the broader concept of a 'just transition' and how the distributional consequences of both climate impacts and adaptation actions can be addressed.¹ It aims to provide a useful starting point for policymakers and others working on adaptation to integrate social justice together with climate change adaptation in Wales.

(b) Defining social justice

There are multiple definitions of social justice, which can relate to a sense of fairness in both the process and outcomes of decision making; the distribution of social, political and economic benefits and burdens, including between generations; inclusion and recognition of different interests and experiences of diverse or marginalised groups. Social justice is closely linked with the concept of climate justice, which recognises climate change as a social and political problem, with the responsibility for and impacts of climate change being unevenly distributed within society and globally. The Welsh Government has made commitments that link social justice with action on climate:

- **The Well-being of Future Generations Act.** Passed in 2015, this unique Welsh law requires public bodies to pursue the economic, social, environmental and cultural well-being of Wales, ensuring that future generations have at least the same quality of life as current generations. The Act establishes seven interconnected well-being goals for Wales
- **Just Transition Framework.** The Welsh Government is developing a Just Transition Framework to provide a strategic approach to achieving a transition to a Net Zero Wales which is fair, inclusive and built on a vision that is driven by improved well-being for society, working towards achieving the Sustainable Development Goals, with the guiding principle of 'leave no-one behind'.*

For this briefing, we adopt the well-being goals for Wales as a practical interpretation of the Welsh Government's vision for social justice. The rest of this briefing is set out in three sections:

1. The link between adaptation and social justice
2. Adaptation and social justice in Wales
3. Recommendations for Wales

* The final Just Transition Framework is expected to be published later in 2023.

This briefing is framed around the well-being goals set out in the Well-being of Future Generations Act 2015.

1. The link between adaptation and social justice

Adaptation is the process of acting to reduce either or both exposure and vulnerability to climate hazards. Adapting to a changing climate relates to social justice in three key ways:

- **Climate impacts have unequal effects.** For many climate risks it is the most vulnerable in society that will be most impacted. For example, lower-income households may be more likely to live in properties at flood risk, which may be less expensive. Furthermore, vulnerable individuals and groups often have less capacity to prepare for and respond to flooding, for example through difficulty in accessing measures to protect their homes or carrying out actions, such as lifting sandbags or flood barriers. Vulnerability and adaptive capacity are therefore interlinked.
- **Adaptation actions to address these risks will themselves have unequal impacts.** For example, the Flood Re insurance scheme helps those who can afford home insurance but makes the gap between those who are insured and the uninsured even larger in the event of flood damage. These inequalities may be different from those arising from the climate risks that they are seeking to avoid. There is also potential for some adaptation actions to have unintended negative effects, increasing exposure of others to climate risks, such as flood defences in one place which create runoff that impacts other areas downstream. Furthermore, adaptation actions to manage flood risk may be required in locations where risk is lower, relying disproportionately on upstream landowners.
- **Effective and fair adaptation requires the distribution of climate risk across society to be considered throughout the policy cycle.** Throughout policy design, implementation and evaluation stages it is necessary to consider fairness to ensure that adaptation policy is consistent with a just transition to a well-adapted society. Extensive, regular engagement with affected stakeholders must be at the heart of this.

We present six key principles to develop socially just adaptation policies.

The CCC identifies six key principles to develop socially just adaptation policies.

Policy goal setting.

1. **Assess how climate change impacts different groups in society differently** and set goals that target adaptation policies and public funds where they are most needed from the outset.
2. **Design adaptation or other policy goals to avoid unintended distributional bias.** For example, the choice of metric used to set policy objectives can introduce unintended incentives which result in less fair outcomes. Such as, purely aiming to maximise avoided monetised damage (e.g. in flooding protection) could lead to unintended biases towards prioritising protection for more wealthy communities at the expense of poorer ones.

Policy design.

3. **Set sufficiently broad 'system boundaries' for adaptation and policy assessment.** A sufficiently broad scope (both spatially and temporally)

should be used that captures all the relevant positive and negative outcomes and those affected by adaptation actions and policy.

4. **Engage extensively and regularly with local stakeholders.** Consultation and co-design are necessary throughout the policy design, implementation, and evaluation phases and key decision-points to successfully tailor adaptation to the specifics of its geographical and social context and to be effective in reducing risks for the most vulnerable.

Implementation and evaluation.

5. **Rigorously track, evaluate and communicate distributional outcomes.** Monitoring and evaluation systems need to be put in place to track outcomes so that distributional consequences of adaptation policy programmes can be identified.
6. **Implement policy flexibly and iteratively, allowing unanticipated effects to be identified and corrected over time.** Incorporate processes to learn from on-the-ground implementation, identify unanticipated effects, and revise policy accordingly to help ensure long-term fairness from adaptation policy.

2. Adaptation and social justice in Wales

(a) Well-being goals and adaptation

Well-designed climate change adaptation actions can help deliver on the well-being goals, but poorly designed actions could hinder their delivery.

The [Well-being of Future Generations Act](#) establishes seven interconnected well-being goals for Wales.² Well-designed climate change adaptation actions can help deliver on each of these goals, but poorly designed actions could hinder their delivery.

Table 1 presents some high-level examples of climate risks which may affect each of Wales's well-being goals. Next to these we present potential benefits from adaptation responses which can support the goals and potential harms from adaptation responses (or a lack of adaptation response), which could undermine the goals.

Well-being goal	Related climate risk	Social benefit from adaptation response	Social harm from adaptation response
A Prosperous Wales and A Resilient Wales	<p>Risks to terrestrial, freshwater and marine habitats and species that provide important ecosystem services from extreme weather or long-term climate changes</p> <p>Business supply chain risks affecting local Welsh businesses</p> <p>Reduced productivity of employees in Wales</p>	<p>Restoring natural woodland and peatland habitats creates natural flood defences, enhances drainage systems (urban and rural) and minimises risks of future climate change</p> <p>Growth in adaptation-related jobs & services, new agricultural products</p> <p>Increased urban greenspace for office and workplace developments</p>	<p>Growth in adaptation jobs for some groups or restoration of natural habitats in some places which sustains or exacerbates existing socio-economic inequalities</p> <p>Loss of business in Wales due to more resilient supply chains elsewhere</p>
A Healthier Wales	<p>Extreme heat health risks to population</p> <p>Flooding and coastal change requiring built interventions</p>	<p>Heat health alerts and resilient health and social care delivery system</p> <p>Increased urban greenspace for cooling, providing additional mental and physical health benefits</p> <p>Nature-based solutions which improve well-being and help to increase biodiversity</p> <p>Adaptation interventions can be built in ways to maximise multiple benefits, such as incorporating paths on sea walls</p>	<p>Dissemination of preventative information reaches only certain groups</p> <p>Greenspace provided inequitably to residents</p> <p>Built adaptation actions may restrict access or impact health and well-being of different communities, such as steeply sloping banks, gravel driveways or noise from air conditioning units</p>

<p>A More Equal Wales</p>	<p>Flooding affecting properties which are more vulnerable to damage due to building fabric and quality</p> <p>Household-level preparedness for flooding can be expensive or rely on homeowners being able to carry out actions, such as putting up flood barriers</p> <p>Flooding impacts on people without insurance</p>	<p>Community-led flood groups which build community-level resilience</p> <p>Improvements to building standards which may improve overall health and well-being of occupants</p>	<p>Flood barriers which may divert water flows to other communities</p> <p>Unequal access to property-level resilience and ability to adopt measures</p> <p>Inaccessible flood warnings for some groups</p>
<p>A Wales of Cohesive Communities</p>	<p>Sea level rise and coastal change in coastal areas at rates and extents too great and costly to protect communities and infrastructure against</p>	<p>Resilient infrastructure development which provides longer-term support to communities</p> <p>Community relocation is considered in ways which support social and economic development</p> <p>Inclusive, participatory decision-making processes for agreeing adaptation responses</p>	<p>Changes in long-term coastal management policies which create disincentives for investment and reduce opportunities in the short-term</p> <p>Policies that result in lower land values which may incentivise migration</p> <p>Decision-making which does not include the communities affected or is not transparent</p>
<p>A Wales of Vibrant Culture and Thriving Welsh Language</p>	<p>Risks to agricultural productivity in rural (Welsh-speaking) communities from drought-induced decline in soil health and water storage capacity</p> <p>Risk of damage from extreme weather to cultural heritage sites</p>	<p>Support for resilient agriculture</p> <p>Conservation of cultural heritage sites</p>	<p>Changing agricultural targets, practices or equipment without proper engagement or support for farmers</p> <p>Cultural heritage adapted or left unprotected without engaging or explaining decisions to the local community</p>
<p>A globally responsible Wales</p>	<p>Risks to terrestrial, freshwater and marine habitats and species which affect global biodiversity</p>	<p>Habitat restoration that increases biodiversity in Wales and contributes to global biodiversity</p>	<p>Diversifying supply chains to increase resilience of imports but increasing imports from areas at high risk for social and deforestation issues</p>

Sources: CCC analysis; WWF Cymru (2021) *Wales and Global Responsibility*.

Notes: A Prosperous Wales and A Resilient Wales are grouped together as the examples of related climate risks and potential social benefits and harms from adaptation responses are largely overlapping.

(b) Embedding fairness into adaptation to support well-being goals

To design effective and fair adaptation policies, it is important to understand different aspects of exposure and vulnerability to climate risks.

The well-being goals provide a useful framework for considering social justice and fairness in Wales and can be clearly linked to adaptation actions which could support the goals if fairness is embedded in their design and implementation. Conversely, adaptation actions which do not appropriately consider fairness can impede the success of the well-being goals.

Understanding different aspects of exposure and vulnerability to climate risks is an essential step in designing effective, fair adaptation policies and interventions. There are several characteristics of communities and individuals that can result in increased or decreased exposure or vulnerability to climate change.

- **Enhanced exposure.** Physical environmental factors that exacerbate or alleviate severity of climate hazards, such as housing quality or nearby green space.³ For example, more than half of the Welsh housing stock is over 50 years old and close to 10% of population in Wales live in a very low-density area.^{*,4,5}
- **Sensitivity.** Personal factors, such as age, ethnicity and health status, can increase likelihood of being adversely affected by climate change risks.⁶ For example, in Wales in 2021, 21% of resident population was 65 and over and 22% of resident population was classed as disabled.^{7,8}
- **Adaptive capacity.** Socio-economic factors that influence the ability to prepare, respond and recover to climate risks, such as income, education, social cohesion, and awareness. For example, in Wales in 2019, the rate of income deprivation was 16%.⁹

There are several factors that influence a person's vulnerability to climate hazards.

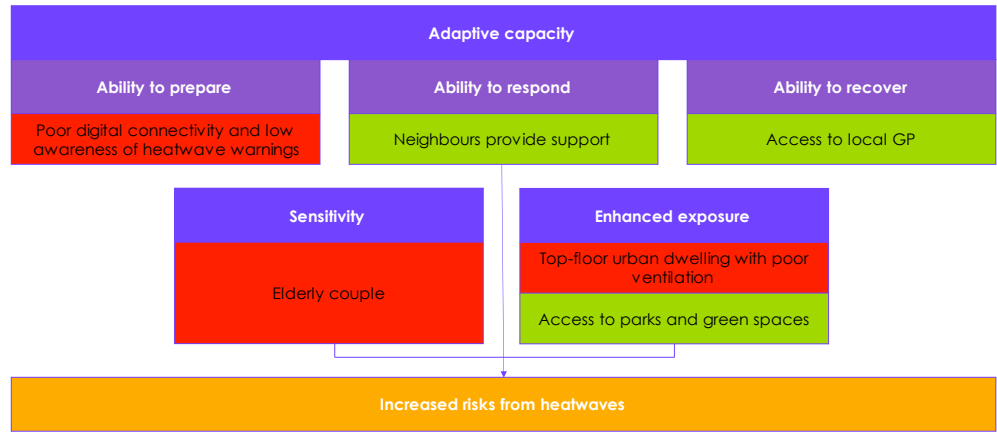
Importantly, people and communities will not experience only one of these drivers of climate risk in isolation. There are multiple dimensions of exposure and vulnerability that can combine. For example, farming communities across Wales rely on income from healthy ecosystems which are highly exposed to climate impacts. This also means any adverse impact can reduce their adaptive capacity to respond.

Intergenerational fairness adds an extra dimension as well, for example, when considering legacy coal infrastructure in Wales. Coal tips are at risk of landslides, exacerbated by flooding and changes in rainfall patterns expected from climate change. Many of the tips at risk are in areas of Wales which are among the 10% most deprived, meaning the environmental legacy of a previous generation's economic activities now fall on communities already vulnerable to climate hazards, further increasing their risk. Providing a robust management regime to ensure the safety of coal tips is needed to address the inequality and social justice issues.¹⁰

A further illustrative example is given in Figure 1 to demonstrate how an urban heatwave climate hazard can lead to different levels of risk depending on both exposure and vulnerability.

* <50 people per square kilometre.

Figure 1 Example climate impact profile for overheating



Source: CCC illustration; Joseph Rowntree Foundation (2011) *Climate change, justice and vulnerability*.
 Notes: Red box indicates a factor that could increase risk. Green box indicates a factor that could decrease risk.

(c) Examples of good practice

We present three good practice examples of how social justice could be incorporated into adaptation policy making.

There are emerging examples of tools and approaches that could enable social justice and fairness to be integrated into adaptation policy making. This section presents three examples in Wales.

(i) Policy goal setting

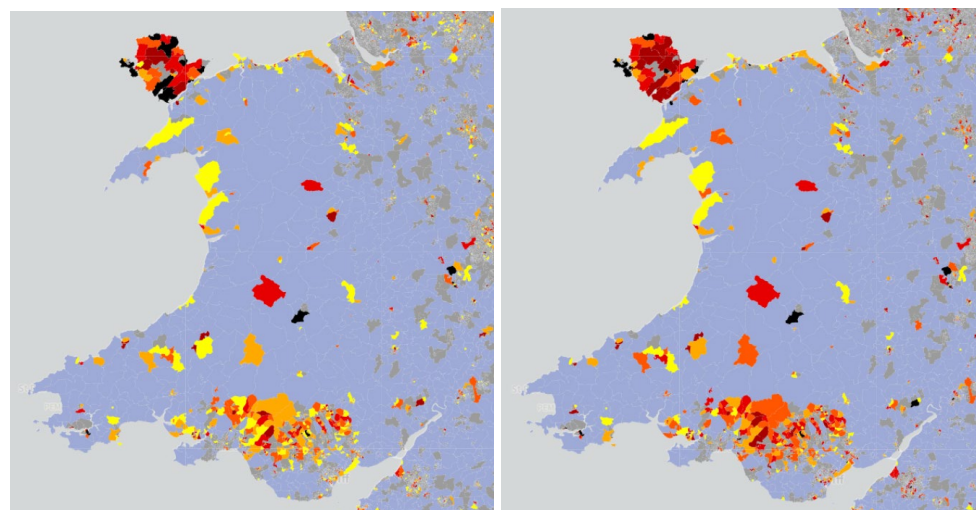
Climate Just provide neighbourhood and social flood risk index maps that combine characteristics of vulnerability and exposure across age, health, income, information use, local knowledge, property tenure, physical mobility, crime, housing, direct flood experience, social networks and service availability.¹¹ This can then be combined with assessments of flood risk to give insight into the social flood risk across Wales which combines the exposure to flooding with the social vulnerability of the neighbourhood (Figure 2). While these maps indicate the areas where exposure and social vulnerability broadly intersect, there will be further nuances which will vary.

Social risk and flood risk can overlap to create particular hotspots of vulnerability and exposure.

Figure 2 Social Flood Risk Index for river and coastal flooding in Wales

a) Present day

b) 2050 2°C scenario



Source: Climate Just (2023) Social Flood Risk Index.

Notes: Social flood risk is a measure of geographic flood disadvantage (i.e. where social vulnerability and exposure to flooding coincide). Information provided for 'Individual scale', which generates a per person risk estimate.

(ii) Policy design and implementation

Recent work to develop the Pembrokeshire Coastal Adaptation Strategy and engagement with communities at risk of flooding in Fairbourne highlight some ways to integrate local views into policy design and decision making.

Pembrokeshire Coastal Forum, Netherwood Sustainable Futures and the Pembrokeshire Public Services Board developed a Climate Adaptation Strategy with businesses, local authorities and community groups. The strategy is one of the first in Wales and was developed over a series of workshops considering community impacts and opportunities from climate risks with over 180 people.¹² Through this engagement, 39 climate adaptation priorities for Pembrokeshire were identified, involving issues affecting infrastructure, communities, natural environment, agriculture and business and industry. The process also identified 24 adaptation actions to build climate resilience in Pembrokeshire.¹³

In Fairbourne, Cyngor Gwynedd council established the Fairbourne Moving Forward project to carry out engagement work with the community. The partnership is community-led and has members from the local community council, Natural Resources Wales, Welsh Government and stakeholders including Dŵr Cymru Welsh Water. The partnership has funded a flood warden scheme and Cyngor Gwynedd commissioned an external Health Impact Assessment (HIA) on behalf of the project board. The core objectives of the HIA are to investigate the health and well-being impacts of living with climate change in Fairbourne today and explore community led suggestions and solutions to aid adaptation, build resilience and improve health.

3. Recommendations for Wales

The Welsh Government has already taken positive steps forward through the Well-being of Future Generations Act and the ongoing consultation for a Just Transition Framework in Wales. We further recommend the following near-term actions to integrate social justice into adaptation in Wales.

- **Include adaptation within the Just Transition Framework and in further work on the just transition or well-being in Wales.** A just transition should include fairness and social justice in the transition towards a resilient Net Zero Wales. The just transition framework and other work on well-being should also aim to harness opportunities from adaptation which can promote social justice, contribute to well-being goals and support the health of Wales's natural and semi-natural ecosystems. For more information on the links between the Net Zero agenda, adaptation and nature, see our briefing [Adaptation and decarbonisation](#) and [Adaptation and the nature emergency](#).
- **Welsh Government should develop and publish an assessment of the characteristics of enhanced exposure, vulnerability and adaptive capacity** to different climate risks in Wales, building on examples of good practice presented here and elsewhere. This work would support central government, government agencies and local government to consider fairness and social justice in the design of adaptation policies.
- **Expand public participation and engagement in adaptation policy design and implementation.** This engagement programme should focus on exploring issues of fairness in national policy areas such as planning, but also the most challenging aspects of adaptation (e.g., managed retreat from low-lying coastal areas), enabling behaviour change and the provision of public funding for adaptation. A diversity of approaches will be needed depending on the local context, requiring bespoke adaptation responses to ensure equitable distribution of benefits.

Endnotes

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- ⁴ Hayles, C. (2022) *How resilient are buildings in the UK and Wales to the challenges associated with a changing climate? Practical recommendations for risk-based adaptation*, <https://www.gov.wales/sites/default/files/publications/2022-06/resilience-of-buildings-to-challenges-associated-with-climate-change.pdf>.
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- ⁶ Jurgilevich, A., Räsänen, A. and Juhola, S. (2021) *Assessing the dynamics of urban vulnerability to climate change: Case of Helsinki, Finland*, *Environmental Science & Policy*, 125, pp. 32–43, <https://www.sciencedirect.com/science/article/pii/S146290112100215X>.
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- ¹¹ Sayers, P.B., Horritt, M., Penning Rowsell, E., and Fieth, J. (2017) *Present and future flood vulnerability, risk and disadvantage: A UK scale assessment*, http://www.sayersandpartners.co.uk/uploads/6/2/0/9/6209349/sayers_2017_-_present_and_future_flood_vulnerability_risk_and_disadvantage_-_final_report_-_uploaded_05june2017_printed_-_stan.pdf
- ¹² Miller Research (2023) *Review of climate change mitigation and adaptation planning in Welsh Councils 2022-23*. Forthcoming. Provided by request to the CCC.
- ¹³ Miller Research (2023) *Review of climate change mitigation and adaptation planning in Welsh Councils 2022-23*. Forthcoming. Provided by request to the CCC.

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