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Integrating people and place into policy: recognising cultural values of nature and lived places for Biodiversity Net Gain

Flurina M. Wartmann and Emma Cary

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Abstract

This paper examines England's Biodiversity Net Gain (BNG) policy and its potential for place-based adaptation in Scotland and beyond. BNG, the market mechanism for ensuring biodiversity is not lost through development, is a highly significant but controversial policy which risks commodifying nature and overlooking local social and cultural values. This paper uses case study evidence to direct policymakers towards models for overcoming these risks and helps to envision a cultural, ecological, and place-based future for BNG.

We argue that BNG's focus on tradeable biodiversity units fails to capture place-specific relationships between communities and nature, creating distributive justice issues when biodiversity loss in one area affecting certain communities is offset by gains benefiting different communities. Drawing on Social Sciences, Humanities, and the Arts (SHAPE) insights, we advocate for place-sensitive approaches integrating diverse values beyond ecological metrics.

We present future visioning as a co-creation method for locally grounded nature recovery policies and examine Switzerland's regional biodiversity offsetting model as an alternative place-based approach. For Scotland's developing framework, we recommend expanding biodiversity metrics to include social and cultural values, strengthening local delivery requirements, and ensuring strategic alignment with social justice agendas.

Keywords: Biodiversity Net Gain (BNG); place-based values; biodiversity; offsetting; local communities; cultural landscape values; social justice; nature recovery; policy

Introduction

Nature in the UK is in a poor state. Around half of the UK's biodiversity has been lost, and one in six species are at risk of extinction.[1] Land use change, including for development, is identified as a key driver of biodiversity loss in Britain.[2] A suite of policy responses recognises that urgent transformation across many sectors is needed to enable nature recovery in the UK.[3] Recent changes to national planning policy in England have introduced mandatory Biodiversity Net Gain (BNG) to ensure developments are demonstrably positive for biodiversity. The BNG policy is intended to represent a strategic lever for nature recovery in England[4] through the requirement for a 10% net gain[5] in biodiversity value for new developments. However, the UK government's priority to accelerate nature recovery[6] along with the proposed pace and scale of change, poses challenges to place-sensitive approaches, which rely on deliberative and participatory methods tailored to diverse local contexts.[7]

Place-based policy differs from top-down policymaking by grounding policy in the lived realities, knowledges, and priorities of local areas. Place-based approaches have come to the fore as effective means to address complex policy challenges, by allowing policymakers to see and respond to overlapping environmental, social, economic, and cultural dimensions at the local level.[8] Such approaches align with the broader UK policy agenda, including the Environment Act 2021 (England) and Levelling Up and Regeneration Act 2023, which emphasise local empowerment and decentralising decision-making.

This discussion paper examines current policy on nature recovery and the extent to which it is, or could be made, more place-sensitive, using BNG as an example. Rooted in mainstream environmental economics,[9] BNG is a market-based instrument which uses biodiversity offsetting (BO) to compensate for unavoidable biodiversity loss caused by development. We focus on the UK, where England has taken the lead in implementing BNG, while a biodiversity metric for BNG is currently being developed for Scotland's planning system.[10] As a result, questions surrounding BNG are becoming increasingly relevant across the UK. This discussion paper draws on insights from the Social Sciences, Humanities, and the Arts for People and the Economy (SHAPE) to explore how lessons from England's BNG policy, and approaches to biodiversity offsetting in Switzerland, can help inform the development of place-based policies in Scotland and beyond.

In the next section we outline the economic foundation of BNG, before introducing how the policy can be conceptualised using SHAPE-informed perspectives in more detail.

1 F. Burns et al., State of Nature 2023, 2023, https://nora.nerc.ac.uk/id/eprint/536075/ [accessed 12 June 2024].
2 T. Montràs-Janer et al., 'Anthropogenic climate and land-use change drive short- and long-term biodiversity shifts across taxa', Nature Ecology & Evolution 2024 8:4, 8:4 (2024), 739–51, doi: 10.1038/s41559-024-02326-7.
3 Statutory Nature Conservation Bodies of the UK, 'Nature Recovery for Our Survival, Prosperity and Wellbeing', 2022, https://jncc.gov.uk/our-role/the-uk/nature-positive-2030/ [accessed 29 November 2022].
4 S. Knight-Lenihan, 'Achieving biodiversity net gain in a neoliberal economy: The case of England', Ambio, 49:12 (2020), 2052–60, doi: 10.1007/S13280-020-01337-5/TABLES/1.
5 Under BNG a mandatory 10% net gain in biodiversity value is required for new developments under the Town and Country Planning Act (TCPA) 1990 and Nationally Significant Infrastructure Projects (NSIPs) consented under the Planning Act 2008.
6 Gov.UK, 'Defra Secretary of State at Summer Stakeholder Reception', 2024, https://www.gov.uk/government/speeches/defra-secretary-of-state-at-summer-stakeholder-reception [accessed 29 April 2025].
7 F. Barca, P. Mccann, and A. Rodríguez-Pose, 'The case for regional development intervention: place-based versus place-neutral approaches', Journal of Regional Science, 52:1 (2012), 134–52, doi: 10.1111/J.1467-9787.2011.00756.X.
8 A. Beer et al., Every Place Matters : Towards Effective Place-Based Policy, Every Place Matters (London: Routledge, 2020), doi: 10.4324/9781003110118.
9 H. Leveson-Gower, What's the Value of Nature? Making Nature Count in Our Economic Systems (Oxford, UK, 22 April 2025), doi: 10.56661/D2FEEDAD.
10 A. Mcvittie et al., Research into Approaches to Measuring Biodiversity in Scotland, 2023; NatureScot, 'A Biodiversity Metric for Scotland's Planning System', NatureScot, 2024, https://www.nature.scot/doc/biodiversity-metric-scotlands-planning-system#initial-consultations-and-identification-of-key-issues [accessed 8 May 2025].

Biodiversity Net Gain as a strategic driver for nature recovery

Conventional environmental economics typically seeks to address environmental issues by assigning economic value to nature and using market-based mechanisms to internalise environmental costs that would otherwise remain externalised and borne by society at large.[11] As a market-based mechanism, BNG seeks to ensure that the environmental costs of development are accounted for by the developers themselves, rather than shifting the costs of biodiversity loss, and its restoration, onto society.

Box 1 Concepts and terminology linked with biodiversity offsetting (adapted from Maron et al. 2016)

Like for like:	Gains and losses are of the same type of biodiversity and are measured using the same metric.
Biodiversity metric:	A surrogate measure of biodiversity used to measure the quantity of losses, gains, and their equivalence.
Offsetability:	The likelihood that an offset for a given impact is likely to replace fully the affected biota; contingent on all risks discussed herein being managed adequately.
No net loss:	An outcome in which the total amount of some target biota does not decline below the level expected under some counterfactual scenario.
Additionality:	The requirement that an offset benefit consists only of gains that would not otherwise have occurred and that are fully additional to the expected scenario without the offset.

As a strategic driver for nature recovery, BNG policy mandates the creation and enhancement of natural habitats in combination with development. BNG aims to avoid and reduce biodiversity loss caused by development, offsetting residual impacts to achieve 'no net loss' (Box 1)[12] or a 'net gain', in biodiversity (see also Box 1).[13] Biodiversity offsetting allows developers to compensate for the negative impacts of development on biodiversity by funding restoration or conservation efforts in other locations. Biodiversity losses and compensation are calculated using the statutory biodiversity metric which provides a measure of the biodiversity value of a particular area.

Biodiversity net gain must be maintained for over 30 years, and can be achieved on-site, off-site, or by purchasing statutory biodiversity credits from the government. As biodiversity itself cannot be traded as a market commodity, biodiversity credits are used as a proxy.[14] The purchase of statutory biodiversity credits is considered the last resort in the Biodiversity Net Gain Hierarchy (Figure 1).[15]

11 D. A. Anderson, Environmental Economics and Natural Resource Management, Environmental Economics and Natural Resource Management, 6th edn (London: Routledge, 2024), doi: 10.4324/9781003428732.

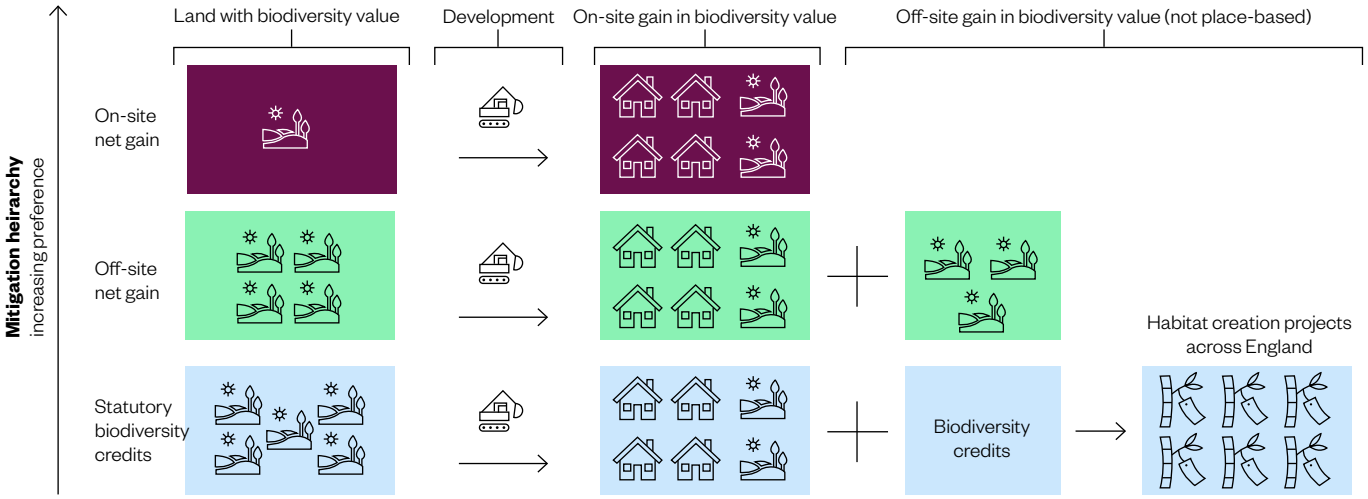
12 M. Maron et al., 'Taming a Wicked Problem: Resolving Controversies in Biodiversity Offsetting', BioScience, 66:6 (2016), 489–98, doi: 10.1093/BIOSCI/BIW038.

13 J. W. Bull et al., 'Biodiversity offsets in theory and practice', Oryx, 47:3 (2013), 369–80, doi: 10.1017/S003060531200172X; E. E. Rampling et al., 'Achieving biodiversity net gain by addressing governance gaps underpinning ecological compensation policies', Conservation Biology, 38:2 (2024), e14198, doi: 10.1111/COBI.14198.

14 Bull et al., 'Biodiversity offsets in theory and practice'.

15 The Town and Country Planning (Development Management Procedure) (England) Order (UK Statutory Instruments, 2015), https://www.legislation.gov.uk/uksi/2015/595/article/37 [accessed 29 May 2025].

Figure 1: Schematic showing options for delivering biodiversity net gain on-site and off-site.



BNG regulations include provision to incentivise local offsetting via a 'spatial risk multiplier' within England's biodiversity metric, which attempts to foster on-site or near-site offsets over more distant options by making distant offsetting more financially costly.[16] Research indicates that this provision, in its current form, could lead to highly inefficient use of resources which neither addresses socioeconomic inequalities, nor delivers optimal biodiversity gains.[17]

By allowing the offsetting to take place in other locations, albeit at slightly higher costs, this approach treats biodiversity as a measurable and tradable asset. Ecological critiques of biodiversity offsetting include the limitations of creating like-for-like replacements,[18] disregard for impact of site development on ecosystem services[19] and challenges relating to recreating different habitat types, for example due to differences in growth rates.[20] While the aim is to balance ecological losses and gains through financial incentives and regulatory structures, making biodiversity into a tradable asset raises philosophical and ethical questions around the notion of putting a price on nature.[21] It also raises social justice questions relating to the distribution of impacts and benefits to communities, as the impacts of development (e.g. on-site nature loss) may be borne by one community, while the benefits associated with the development (e.g. off-site nature provision) are experienced by a community elsewhere.[22] These questions are the subject of ongoing debate and do not have simple or clear-cut answers. Perspectives on market-based approaches to biodiversity conservation are highly polarised, reflecting deeply held and differing underlying values.[23]

16 Defra, The Statutory Biodiversity Metric User Guide, 2025, https://assets.publishing.service.gov.uk/media/6866779ee134dfbc2e9e6d39/The_Statutory_Biodiversity_Metric_-_User_Guide_-_July_2025.pdf [accessed 16 July 2025].

17 M. C. Mancini et al., 'Biodiversity offsets perform poorly for both people and nature, but better approaches are available', One Earth, 7:12 (2024), 2165–74, doi: 10.1016/J.ONEEAR.2024.10.002/ATTACHMENT/BA13350B-803A-4540-A9E8-A32A9C25135B/MMC2.PDF.

18 C. Borges-Matos, M. Maron, and J. P. Metzger, 'A Review of Condition Metrics Used in Biodiversity Offsetting', Environmental Management, 72:4 (2023), 727–40, doi: 10.1007/S00267-023-01858-1/FIGURES/6.

19 L. J. Sonter et al., 'Offsetting impacts of development on biodiversity and ecosystem services', Ambio, 49:4 (2020), 892–902, doi: 10.1007/S13280-019-01245-3/FIGURES/3.

20 M. Curran, S. Hellweg, and J. Beck, 'Is there any empirical support for biodiversity offset policy?', Ecological Applications, 24:4 (2014), 617–32, doi: 10.1890/13-0243.1.

21 C. L. Spash, 'Bulldozing biodiversity: The economics of offsets and trading-in Nature', Biological Conservation, 192 (2015), 541–51, doi: 10.1016/J.BIOCON.2015.07.037.

22 B. Gonçalves et al., 'Biodiversity offsets: from current challenges to harmonized metrics', Current Opinion in Environmental Sustainability, 14 (2015), 61–7, doi: 10.1016/J.COSUST.2015.03.008; S. Neuteleers, 'Survey Article: Trading Nature: When Are Environmental Markets (Un) desirable?', Journal of Political Philosophy, 30:1 (2022), 116–39, doi: 10.1111/JOPP.12257.

23 S. Sullivan and M. Hannis, 'Nets and frames, losses and gains: Value struggles in engagements with biodiversity offsetting policy in England', Ecosystem Services, 15 (2015), 162–73, doi: 10.1016/J.ECOSER.2015.01.009.

This paper explores two interrelated aspects of BNG and how SHAPE disciplines can provide alternative perspectives. First, we examine the commodification of nature, arguing that assigning prices to biodiversity overlooks alternative values and relationships with the natural world. Incorporating diverse values may complement market-based approaches to BNG implementation.

Second, we question BNG's assumption that biodiversity units are tradable across locations, examining the degree to which this approach is place-based. We suggest that SHAPE-informed understandings of place rich with meaning, emotion, and social significance, can enhance BNG practices to better reflect local ecological and cultural contexts while delivering benefits to both people and nature.

Putting a price on nature

Current policy approaches to valuing nature are largely shaped by the biodiversity crisis and the proposed solutions to address it, often prioritising financial values in decision-making.[24] This framing aligns closely with the underlying premise of BNG policy, which assumes that nature and biodiversity can be disaggregated into measurable components that can be financialised and traded through market-based mechanisms.[25] Such market-oriented solutions to environmental problems form the basis of the 'green economy'.[26] The economic rationale behind these approaches treats nature as a uniform, quantitative whole, where values are aggregated, and gains and losses can be exchanged .[27] Critics of the financialisation of nature argue that market-based approaches to nature recovery detach nature from its local spatial and social contexts.[28] These policies reflect a dichotomy between humans and nature, treating them as separate entities, and focus primarily on reducing or mitigating human impacts, rather than recognising the interconnectedness and mutual dependence between people and nature.[29]

While relocating biodiversity may achieve no net loss ecologically, it overlooks the social and cultural values tied to nature in specific places, which cannot be transferred. For example, if development reduces green space in Oldham, Manchester and biodiversity is offset in the Cotswolds, the social, recreational, and wellbeing benefits shift to a different community with a likely different socio-economic profile. This approach risks disproportionately impacting already marginalised or nature-deprived communities.[30] Further, despite there being perceived benefits associated with establishing biodiversity offsets, receiving communities may experience disbenefits; for example if they are excluded from decision-making processes,[31] or if the offset results in unwanted types of habitat.[32] When BNG involves off-site delivery through spatial exchange of biodiversity, distributive and procedural justice concerns (Box 2) emerge as communities may face biodiversity loss, reduced nature access, or imposed landscape changes.[33]

Box 2 Aspects of social-environmental justice

Procedural justice – fairness in interactions and processes

Distributive justice – fairness in the distribution of costs and benefits

24 IPBES, Methodological Assessment of the Diverse Values and Valuation of Nature of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (Bonn, 2022), https://doi.org/10.5281/zenodo.7687931 [accessed 31 July 2024]; U. Pascual et al., 'Diverse values of nature for sustainability', Nature 2023 620:7975, 620:7975 (2023), 813–23, doi: 10.1038/s41586-023-06406-9.

25 B. Coffey, 'Unpacking the politics of natural capital and economic metaphors in environmental policy discourse', Environmental Politics, 25:2 (2016), 203–22, doi: 10.1080/09644016.2015.1090370.

26 C. Corson, K. I. MacDonald, and B. Neimark, 'Grabbing "Green": Markets, Environmental Governance and the Materialization of Natural Capital', Institute of Human Geography, 6:1 (2013), 1–15, doi: 10.1177/194277861300600101.

27 L. Carver, 'Seeing no net loss: Making nature offset-able', Environment and Planning E: Nature and Space, 6:4 (2023), 2182–202, doi: 10.1177/25148486211063732/ASSET/CB20AFDA-DC2F-4547-96F8-BDBEFDFD437B/ASSETS/IMAGES/LARGE/10.1177_25148486211063732-FIG3.JPG.

28 K. Mcafee, 'Selling nature to save it? Biodiversity and green developmentalism', Environment and Planning D: Society and Space, 17 (1999), 133–54.

29 F. Biermann, 'The future of "environmental" policy in the Anthropocene: time for a paradigm shift', Environmental Politics, 30:1–2 (2021), 61–80, doi: 10.1080/09644016.2020.1846958.

30 S. Caillon et al., 'Moving beyond the human-nature dichotomy through biocultural approaches: including ecological well-being in resilience indicators', Ecology and Society, 22:4 (2017), doi: 10.5751/ES-09746-220427.

31 A. K. Tupala, S. Huttunen, and P. Halme, 'Social impacts of biodiversity offsetting: A review', Biological Conservation, 267 (2022), 109431, doi: 10.1016/J.BIOCON.2021.109431.

32 F. M. Wartmann and J. Lorimer, 'Messy natures: The political aesthetics of nature recovery', People and Nature, 2024, doi: 10.1002/PAN3.10743.

33 O. Taherzadeh and P. Howley, 'No net loss of what, for whom?: stakeholder perspectives to Biodiversity Offsetting in England', Environment, Development and Sustainability, 20:4 (2018), 1807–30, doi: 10.1007/S10668-017-9967-Z/FIGURES/1.

While BO instruments aim for no net loss in ecological value, they do not currently safeguard no net loss in social value.[34] Onsite and offsite BNG delivery affects people-place and people-nature relationships in these locations. However, biodiversity offsets' social impacts are often narrowed to economic or livelihood concerns, overlooking cultural, spiritual, or recreational values due to challenges in measuring these intangible benefits.[35]

While acknowledging broader debates around biodiversity offsetting,[36] this paper takes a pragmatic approach to provide constructive solutions within existing offsetting systems. The following section explores how place-based approaches that integrate societal values can address justice concerns and enhance BNG's wider benefits.

34 Ibid.

35 Tupala, Huttunen, and Halme, 'Social impacts of biodiversity offsetting: A review'; CIEEM, How Can Good Practice for Biodiversity Net Gain Incorporate People's Wellbeing? Core Messages & Recommendations, October 2021, https://cieem.net/resource/how-can-good-practice-for-biodiversity-net-gain-incorporate-peoples-wellbeing-core-messages-recommendations/ [accessed 22 May 2025].

36 F. L. P. Damiens, L. Porter, and A. Gordon, 'The politics of biodiversity offsetting across time and institutional scales', Nature Sustainability 2020 4:2, 4:2 (2020), 170–9, doi: 10.1038/s41893-020-00636-9; K. Chapman and M. Tait, 'Commodification, labor, abstraction: Three key concepts to understand the many-headed hydra of biodiversity offsetting', Journal of Political Ecology, 32:1 (2025), doi: 10.2458/JPE.6186.

The understanding of 'place' and the social value of nature

The ecological benefits of nature recovery across space are relatively well evidenced, but the socio-cultural impacts are still less understood.[37] To better understand these impacts, we introduce the important notion of place here, which has been studied across various SHAPE fields, including human geography,[38] environmental psychology[39] and urban planning.[40] Although defined differently across disciplines[41] place generally refers to a specific location that is imbued with meanings, feelings and emotions, or a sense of place. For example, social anthropologists Feld and Basso[42] define sense of place as: '[…] the experiential and expressive ways places are known, imagined, yearned for, held, remembered, voiced, lived, contested and struggled over […]'.

SHAPE literature further highlights landscape and nature's place-based social values, which reflect both geophysical and cultural contexts.[43] For example, the Norfolk Broads National Park (Figure 2) is a designated wetland of international importance (Ramsar site), rich in nature and biodiversity.

Figure 2 The low-lying wetlands and reedbeds of the Norfolk Broads provide recreational value, biodiverse habitats, as well as traditional building materials for thatching. In many places, reeds are still harvested by hand using traditional hook and scythe. Photo: Emma Cary

37 S. Löfqvist et al., 'How Social Considerations Improve the Equity and Effectiveness of Ecosystem Restoration', BioScience, 73:2 (2023), 134–48, doi: 10.1093/BIOSCI/BIAC099.

38 D. B. . Massey, For Space (Sage, 2005); Y.-F. Tuan, 'Place: An Experiential Perspective', Geographical Review, 65:2 (1975), 151, doi: 10.2307/213970.

39 M. Lewicka, 'Place attachment: How far have we come in the last 40 years?', Journal of Environmental Psychology, 31:3 (2011), 207–30, doi: 10.1016/J.JENVP.2010.10.001.

40 A. H. Toomey et al., 'Place-making, place-disruption, and place protection of urban blue spaces: perceptions of waterfront planning of a polluted urban waterbody', Local Environment, 26:8 (2021), 1008–25, doi: 10.1080/13549839.2021.1952966.

41 F. M. Wartmann and R. S. Purves, 'Investigating sense of place as a cultural ecosystem service in different landscapes through the lens of language', Landscape and Urban Planning, 175 (2018), 169–83, doi: 10.1016/J.LANDURBPLAN.2018.03.021.

42 Steven Feld and Keith H. Basso, 'Senses of Place' (James Currey Publishers, 1996), https://philpapers.org/rec/FELSOP-3. p.11

43 E. Apostolopoulou and W. M. Adams, 'Biodiversity offsetting and conservation: reframing nature to save it', Oryx, 51:1 (2017), 23–31, doi: 10.1017/S0030605315000782.

The Norfolk Broads' low-lying, peaty farmland has been shaped by centuries of drainage, creating both unique habitats and a cultural landscape tied to agriculture, water management, and tourism. If development destroys wetland habitat here and the biodiversity value is offset by creating wetland habitat elsewhere, although the biodiversity value has been recreated, the social and cultural values have not, and the irreplaceable uniqueness and people-place bonds are lost. While only a few special places or broader landscapes such as England's National Parks or National Landscapes (formerly Areas of Outstanding Natural Beauty, or AONBs) may hold widely recognised social values, nearly all landscapes are valued in diverse ways by those closely connected to them.[44]

Social and cultural values of nature differ between 'insider' (local) and 'outsider' perspectives. Typically, outsiders focus on aesthetic and physical landscape features, while locals emphasise lived experiences and emotional connections to place.[45] Such relational and intrinsic values are multifaceted[46] but they remain underrepresented in environmental policymaking.[47]

Social science assessment methods for such values have been developed[48] and can be used to assess changes in values related to nature recovery interventions. For example, research on housing developments shows that nature can enhance community sense of identity and attachment.[49] Importantly, changes to places and how they affect sense of place have been found to be powerful reasons for place-protective action.[50] This is particularly relevant for BNG, as development can disrupt nature in places with strong community significance. While nature recovery can foster belonging and place attachment, it may also disconnect communities from local landscapes and disrupt people-place bonds, by altering how landscapes look and can be accessed, without paying attention to long histories of human habitation.[51]

While natural features can often be measured using objective metrics, social and cultural values are experienced in embodied and relational ways, and are deeply tied to specific and unique places.[52] Understanding people-nature relationships through place reveals a fundamental tension: tradable biodiversity units cannot capture nature's lived, place-based meanings, highlighting the challenge of applying market approaches to locally grounded people-nature connections.

One way in which this challenge has been addressed in policy is through the development of Local Nature Recovery Strategies (LNRSs).[53] LNRSs, developed collaboratively using local knowledge and published by a responsible authority after public consultation, identify priority areas and actions for nature recovery. LNRSs interact with BNG to establish a framework of evidence-based locations for nature recovery, acting as policy levers to strategically locate habitat creation and improvement for maximum benefit for people and nature.[54] Many LNRSs are still under

44 J. Stephenson, 'The Cultural Values Model: An integrated approach to values in landscapes', Landscape and Urban Planning, 84:2 (2008), 127–39, doi: 10.1016/J.LANDURBPLAN.2007.07.003; F. M. Wartmann et al., 'Relating landscape ecological metrics with public survey data on perceived landscape quality and place attachment', Landscape Ecology, 36:8 (2021), 2367–93, doi: 10.1007/s10980-021-01290-y.

45 A. Butler, 'Dynamics of integrating landscape values in landscape character assessment: the hidden dominance of the objective outsider', Landscape Research, 41:2 (2016), 239–52, doi: 10.1080/01426397.2015.1135315; S. Kianicka et al., 'Locals' and Tourists' Sense of Place', Mountain Research and Development, 26:1 (2006), 55–63.

46 S. Campbell and L. Gurney, 'What are we protecting? Rethinking relational values and nature(s)', Ecosystems and People, 20:1 (2024), doi: 10.1080/26395916.2024.2315973.

47 K. M. A. Chan et al., 'Why protect nature? Rethinking values and the environment', PNAS, 113:6 (2015), 1462–5, doi: 10.13140/RG.2.1.5146.0560.

48 T. Plieninger et al., 'Assessing, mapping, and quantifying cultural ecosystem services at community level', Land Use Policy, 33 (2013), 118–29, doi: 10.1016/J.LANDUSEPOL.2012.12.013; X. Cheng et al., 'Evaluation of cultural ecosystem services: A review of methods', Ecosystem Services, 37 (2019), 100925, doi: 10.1016/J.ECOSER.2019.100925; D. Cabana et al., 'Evaluating and communicating cultural ecosystem services', Ecosystem Services, 42 (2020), 101085, doi: 10.1016/J.ECOSER.2020.101085.

49 J. Kim and R. Kaplan, 'Physical and psychological factors in sense of community: New Urbanist Kentlands and Nearby Orchard Village', Environment and Behavior, 36:3 (2004), 313–40, doi: 10.1177/0013916503260236.

50 P. Devine-Wright, 'Rethinking NIMBYism: The role of place attachment and place identity in explaining place-protective action', Journal of Community & Applied Social Psychology, 19:6 (2009), 426–41, doi: 10.1002/CASP.1004.

51 M. Drenthen, 'Ecological Restoration and Place Attachment: Emplacing Non-Places?', Environmental Values, 18:3 (2009), 285–312, doi: 10.3197/096327109X12474739376451.

52 J. Stephenson, 'The Dimensional Landscape Model: Exploring Differences in Expressing and Locating Landscape Qualities', Landscape Research, 35:3 (2010), 299–318, doi: 10.1080/01426391003743934; K. M. A. Chan, T. Satterfield, and J. Goldstein, 'Rethinking ecosystem services to better address and navigate cultural values', Ecological Economics, 74 (2012), 8–18, doi: 10.1016/J.ECOLECON.2011.11.011; Wartmann and Purves, 'Investigating sense of place as a cultural ecosystem service in different landscapes through the lens of language'.

53 I. Mell and G. Jerome, 'Planning and Biodiversity Net Gain in the UK', Planning Theory & Practice, 25:1 (2024), 114–9.

54 Defra, 'Incorporating Local Nature Recovery Strategies when planning for Biodiversity Net Gain', Gov.Uk, 2023, https://defraenvironment.blog.gov.uk/2023/11/07/incorporating-local-nature-recovery-strategies-when-planning-for-biodiversity-net-gain/ [accessed 6 May 2025].

development so changes resulting from including a broad range of audiences, who do not usually have a say in nature recovery priority setting, are yet to be seen. Social science research points to the temporal and spatial distribution of biodiversity-related social impacts of development, which differ depending on the level (individual, household, town etc) at which they are calculated.[55] Therefore, to ensure both the tangible and intangible benefits of BNG and local nature recovery are realised and fairly distributed across society, it is essential to monitor these changes using SHAPE-based methodologies, which can track shifts in values, access and impacts over time and across different locations.

In the following section we discuss how monitoring access to nature can act as an entry point to ensure that nature recovery delivers social as well as ecological benefits, supports inclusive and equitable outcomes, and informs effective, place-based policy and investment.

55 V. F. Griffiths et al., 'No net loss for people and biodiversity', Conservation Biology, 33:1 (2019), 76–87, doi: 10.1111/COBI.13184.

The social value of nature: access to nature as a facet of social justice

There is strong evidence demonstrating that access to nature provides wide ranging benefits to people.[56] This includes increased physical activity,[57] improved mental health,[58] stress reduction,[59] and enhanced social contact.[60] Evidence from urban gardening shows that these benefits are higher with increased biodiversity.[61] The public health gains of recreational activity in nature are significant, estimated to provide £2 billion of value per year in England alone.[62] However, the UK is one of the most nature-depleted countries in the world[63] which limits opportunities for people to encounter the rich, biodiverse spaces that are essential for health and wellbeing.[64]

Furthermore, access to what nature remains is not equally distributed across society. For example, different population groups vary considerably in how often they visit nature, reflecting overlapping inequalities such as differences in access and opportunity.[65]

Access to private gardens is linked with higher wellbeing and connection to nature.[66] For individuals without access to a private garden, public green spaces are essential for experiencing the benefits of nature. However, the availability of such spaces often falls short of recommended targets[67] despite ambitious plans set out in the 2023 Environmental Improvement Plan to ensure everyone has access to green or blue space within 15 minutes of their home.[68] There is poorer green space provision in deprived areas,[69] and racial disparities in green space access.[70] Even where people from more deprived areas have access to green space, it may not be high-quality green space, suffering neglect and lack of amenities, and can therefore remain underused.[71]

56 Caoimhe Twohig-Bennett and Andy Jones, 'The Health Benefits of the Great Outdoors: A Systematic Review and Meta-Analysis of Greenspace Exposure and Health Outcomes', Environmental Research 166 (1 October 2018): 628–37, https://doi.org/10.1016/J.ENVRES.2018.06.030; J Jones et al., ' Net Gain: Seeking Better Outcomes for Local People When Mitigating Biodiversity Loss from Development', One Earth 1 (2019): 195–201, https://doi.org/10.1016/j.oneear.2019.09.007.

57 D. F. Shanahan et al., 'The Benefits of Natural Environments for Physical Activity', Sports Medicine, 46:7 (2016), 989–95, doi: 10.1007/S40279-016-0502-4/FIGURES/2.

58 G. N. Bratman et al., 'Nature and mental health: An ecosystem service perspective', Science Advances, 5:7 (2019), 903–27, doi: 10.1126/SCIADV.AAX0903/SUPPL_FILE/AAX0903_SM.PDF.

59 T. Hartig et al., 'Nature and health', Annual Review of Public Health, 35 (2014), 207–28, doi: 10.1146/ANNUREV-PUBLHEALTH-032013-182443/1.

60 J. Maas et al., 'Social contacts as a possible mechanism behind the relation between green space and health', Health & Place, 15 (2009), 586–95, doi: 10.1016/j.healthplace.2008.09.006.

61 C. Young et al., 'Psychological restoration in urban gardens related to garden type, biodiversity and garden-related stress', Landscape and Urban Planning, 198 (2020), 103777, doi: 10.1016/J.LANDURBPLAN.2020.103777.

62 M. P. White et al., 'Recreational physical activity in natural environments and implications for health: A population based cross-sectional study in England', Preventive Medicine, 91 (2016), 383–8, doi: 10.1016/J.YPMED.2016.08.023.

63 Burns et al., State of Nature 2023.

64 G. Carrus et al., 'Go greener, feel better? The positive effects of biodiversity on the well-being of individuals visiting urban and peri-urban green areas', Landscape and Urban Planning, 134 (2015), 221–8, doi: 10.1016/J.LANDURBPLAN.2014.10.022; B. W. Wheeler et al., 'Beyond greenspace: An ecological study of population general health and indicators of natural environment type and quality', International Journal of Health Geographics, 14:1 (2015), 1–17, doi: 10.1186/S12942-015-0009-5/FIGURES/6.

65 A. Jones, M. Hillsdon, and E. Coombes, 'Greenspace access, use, and physical activity: Understanding the effects of area deprivation', Preventive Medicine, 49 (2009), 500–5, doi: 10.1016/j.ypmed.2009.10.012; K. Colley, K. N. Irvine, and M. Currie, 'Who benefits from nature? A quantitative intersectional perspective on inequalities in contact with nature and the gender gap outdoors', Landscape and Urban Planning, 223 (2022), 104420, doi: 10.1016/J.LANDURBPLAN.2022.104420.

66 S. de Bell et al., 'Spending time in the garden is positively associated with health and wellbeing: Results from a national survey in England', Landscape and Urban Planning, 200 (2020), 103836, doi: 10.1016/J.LANDURBPLAN.2020.103836.

67 O. Barbosa et al., 'Who benefits from access to green space? A case study from Sheffield, UK', Landscape and Urban Planning, 83:2–3 (2007), 187–95, doi: 10.1016/J.LANDURBPLAN.2007.04.004.

68 HM Government, Environmental Improvement Plan 2023: First Revision of the 25 Year Environment Plan, 2023.

69 T. T. Ngan et al., 'Inequality in green space distribution and its association with preventable deaths across urban neighbourhoods in the UK, stratified by Index of Multiple Deprivation', J Epidemiol Community Health, 79:2 (2025), 102–9, doi: 10.1136/JECH-2024-222485.

70 T. Robinson et al., 'Examining Psychosocial and Economic Barriers to Green Space Access for Racialised Individuals and Families: A Narrative Literature Review of the Evidence to Date', International Journal of Environmental Research and Public Health, 20:1 (2022), 745, doi: 10.3390/IJERPH20010745.

71 M. Mears et al., 'Understanding the socioeconomic equity of publicly accessible greenspace distribution: The example of Sheffield, UK', Geoforum, 103 (2019), 126–37, doi: 10.1016/J.GEOFORUM.2019.04.016.

Given nature's multiple benefits, ensuring equitable access to biodiversity-rich places is a social justice issue. This requires proactive, inclusive approaches to BNG policies that integrate biodiversity enhancement with community well-being.

The next section presents a participatory engagement tool for co-creating visions of restored natural environments, enabling communities to share priorities and shape policies addressing their specific challenges and opportunities.

Engagement in future-making for more place-based nature recovery policies

There is a clear need for more place-based research to understand the fine-detailed geographical distinctions within areas, including the perceptions and needs of individuals and communities or 'stakeholders'.[72] Due to the complexities of who constitutes 'local' stakeholders, biodiversity offsetting has been described as a 'laboratory'[73] in which to examine whose voices count, or should count, in sustaining biodiversity. Within this laboratory, there is an opportunity to test engagement methods that encourage broad and active participation, allowing people to share what nature means to them, how they value it, and their vision for a future under nature recovery. This approach enables open discussion of trade-offs and fosters the (re)engagement of marginalised groups and can work towards more inclusive decision-making in nature recovery.[74]

As an example, we here introduce future visioning as an engagement method. Future visioning is a tool for generating place-based and inclusive visions of desirable future states[75] that can be expressed through words, images, drawings and other means. It is but one of many different engagement methods used in stakeholder engagement for nature recovery.[76] We choose to include the future visioning method here for its potentially transformative way of engaging with stakeholders. More inclusive than top-down scenario development, it focuses on co-imagining a positive and desirable future state and fosters constructive discussions and deliberations rather than conflictive situations. It is therefore particularly well suited, amongst a range of other tools, to help create place-based and place-sensitive policy that is grounded in lived experiences and the lived realities of diverse communities. As an emergent method in the SHAPE disciplines, it is also perhaps still less widely known than traditional (though still very valuable) engagement methods such as focus groups, surveys and other deliberative approaches.

Early engagement

As with any method of engagement, if communities are approached early through a visioning exercise, where they are asked what future for their community and places they desire, a forum is created where different voices can be heard, shaping the goals of nature recovery based on what matters most locally. The visioning method can start with an exercise on the present, which includes both positive aspects to protect and enhance, and challenges to address. It can then progress to a discussion to develop a desired future state to maintain and enhance positive aspects with imagining a future that addressed current challenges. For example, a rural community may value balancing biodiversity with productive land use, while an urban community might care most about quality and safe accessibility of local green spaces for different residents.[77] The discussion can then be progressed further by identifying possible pathways on how to reach the desirable future state from the current state.

72 J. Boswell et al., 'Place-based Politics and Nested Deprivation in the U.K.: Beyond Cities-towns, "Two Englands" and the "Left Behind"', Representation, 58:2 (2020), 169–90, doi: 10.1080/00344893.2020.1751258.

73 D. Takacs, 'Whose voices count in biodiversity conservation? Ecological democracy in biodiversity offsetting, REDD+, and rewilding', Journal of Environmental Policy & Planning, 22:1 (2019), 43–58, doi: 10.1080/1523908X.2019.1661234.

74 L. Barkley et al., 'Principles for delivering transformative co-design methodologies with multiple stakeholders for achieving nature recovery in England', Area, 56:4 (2024), e12963, doi: 10.1111/AREA.12963.

75 R. Lembi, C. Wentworth, and J. Hodbod, 'Recipe for a scenario: Moving from vision to actionable pathways towards sustainable futures', Progress in Environmental Geography, 3:2 (2024), 89–114, doi: 10.1177/27539687241253616.

76 J. Davis et al., The Nattergal Report on Stakeholder Engagement Best Practice for Landscape-Scale Nature Recovery Projects, 2023.

77 R. Dunn-Capper et al., 'Diverse approaches to nature recovery are needed to meet the varied needs of people and nature', Sustainability Science, 1 (2023), 1–17, doi: 10.1007/S11625-023-01337-W/FIGURES/6; C. Ward et al., 'Perceptions, preferences and barriers: A qualitative study of greenspace and under-representation in Leeds, UK', People and Nature, 5:4 (2023), 1284–98, doi: 10.1002/PAN3.10507.

Exploring what nature and biodiversity mean locally

The visioning method enables participants to express what nature means in their context, emotionally, culturally, spiritually, or ecologically. This helps to foreground place-specific values that may not be captured through standard ecological assessments. Resulting policies could then incorporate relational values (e.g., sense of identity, place attachment or cultural meaning) alongside ecological metrics.

Co-creating a shared vision for local nature recovery

Facilitated sessions can support communities in collectively imagining and co-creating a vision of a future where both nature and people thrive. These visions may take the form of narratives, annotated maps that connect stories or memories to specific places, or artistic representations that capture what recovered nature looks, feels, smells, and sounds like (Figure 3).

Figure 3: A professional illustrator is life-drawing the present and the vision of a desirable future for a farming cluster workshop (photo: Flurina Wartmann)

Such a shared vision can, for instance, guide policy priorities and decisions on where to invest BNG offsetting locally, wherever possible.

Limitations

Although evidence suggests public involvement supports BNG outcomes,[78] research also points to procedural justice (Box 2) concerns in biodiversity offsetting which rarely involves local people, or employs participatory methods, to determine the appropriateness of offsetting areas.[79] The visionary method represents a means of addressing these concerns. As with many participatory planning methods, effectively balancing diverse stakeholder interests and power dynamics is integral, as is ensuring meaningful participation of marginalised groups. Vision-driven approaches may face temporal and resource related challenges in political contexts. However, by considering a range of voices and governance scales,[80] the method creates space for a multiplicity of perspectives, and enables open discussion of trade-offs, allowing participants to collaboratively explore acceptable compromises.

While the visionary method offers an example of a SHAPE method for enhancing local participation within the UK's existing BNG framework, examining how other jurisdictions have designed biodiversity offsetting systems to incorporate place-based considerations provides valuable insights for policy development, demonstrating different ways to structure policies that better reflect local ecological priorities and community values.

78 R. McGee and C. Anderson, 'Engaging people for Biodiversity Net Gain ', Institute of Development Studies, 2025, https://www.ids.ac.uk/opinions/engaging-people-for-biodiversity-net-gain/ [accessed 22 May 2025].

79 Tupala, Huttunen, and Halme, 'Social impacts of biodiversity offsetting: A review'.

80 A. Paz, A. Wright, and S. Darcy, Understanding the Role of Place in Environmental Sustainability , 2023, https://www.thebritishacademy.ac.uk/this-is-shape/ [accessed 12 March 2025].

Learning from other place-based policies on biodiversity offsetting – the case of Switzerland

We present an example of place-based policy from outside the UK, focusing on Switzerland—a country with which one of the authors (Wartmann) is deeply familiar through lived experience and professional engagement in landscape-related policy research.[81] This example is offered as a source of potential inspiration for furthering place-based policymaking in the UK. Biodiversity offsetting in Switzerland also follows a mitigation hierarchy, but rather than a market-based system, Switzerland applies an ecological compensation model focused on restoring or enhancing habitats with ecological equivalence and geographical proximity to the impacted area. The policy distinguishes between 'restoration' and 'replacement' measures:

> Restoration measures remedy temporary interventions in habitats worthy of protection of the same type, with the same function and to the same extent **at the site of the intervention**. Replacement measures compensate for losses caused by interventions in habitats worthy of protection of the same type, with the same function and to the same extent at another location or in another appropriate manner at another location in **the same region**. The replacement should restore the overall ecological balance within **a regional framework**.[82] (author's own translation, bold emphasis added)

The policy thus contains two strong place-based elements. Restoration measures must be at the site of the intervention ('in the same place'), and for the replacement measures, there is a requirement for maintaining overall biodiversity as measures within a regional framework that maintains spatial proximity between the development and compensation (Figure 4).

Figure 4: An ecological compensation area in Weiach, Switzerland that was created in a former quarry as ecological compensation for the 5th extension of the Zurich Airport. The compensation area is 13km away from the airport. (Photo: Beat Wartmann)

81 BAFU/WSL (Hrsg.), Landschaft Im Wandel, Ergebnisse Aus Dem Monitoringprogramm Landschaftsbeobachtung Schweiz (LABES)., 2022, https://www.bafu.admin.ch/bafu/de/home/themen/landschaft/publikationen-studien/publikationen/wandel-der-landschaft.html [accessed 30 May 2025].

82 BAFU, 'Ökologischer Ausgleich', 2022, https://www.bafu.admin.ch/bafu/de/home/themen/biodiversitaet/nachhaltige-nutzung-der-biodiversitaet/oekologischer-ausgleich.html [accessed 30 May 2025].

This regional focus intersects with the Swiss Landscape Concept[83] as a strategic policy instrument developed by the Swiss Federal Office for the Environment (FOEN). The Swiss Landscape Concept (LKS) recognises that landscapes are not just ecological spaces, but also social, cultural, and emotional places shaped by the interactions between people and nature. Importantly, the LKS functions as a policy framework rather than new legislation. It clarifies how existing legal provisions should be interpreted and coordinated across different levels of government, reducing implementation barriers. As a planning and coordination tool, the LKS enhances policy coherence across sectors and governance levels. This approach offers relevant lessons for the UK context. A similar non-legislative policy framework could help integrate landscape and cultural values into biodiversity policy, supporting more holistic nature recovery without the delays or complexity of legislative reform.

For biodiversity offsetting, the LKS provides policy direction and landscape quality objectives that should influence how offsetting or 'replacement' measures are designed and considered by relevant authorities when they are evaluating proposals. It should ensure that biodiversity compensation measures are landscape-sensitive, ecologically meaningful, and part of a coherent national strategy for nature and landscape protection that tie in with broader landscape quality objectives that integrate broader cultural and social values. Municipalities and nature conservation NGOs participate in the approval process.

Figure 5: An ecological compensation area in Rupperswil where the national railways SBB invest 5M Swiss francs for ecological compensation to renew their water energy concession (Photo: Claudia Wartmann)

An evaluation of the guideline document on biodiversity offsetting measures shows that cultural landscape values are treated under 'further criteria' next to a range of ecological criteria, but clear guidance to consider cultural landscapes is specified, for example:

> If, for example, a small standing water body and a hedge are classified as ecologically equivalent in an individual case, the hedge should be preferred in a typical hedgerow landscape. On the other hand, in a landscape that has never known hedges due to natural conditions or its cultural landscape use, other habitat types than hedges should be considered. This takes into account not only the ecological function, but also the developmental history of a cultural landscape and its readability. Its character can thereby be preserved or even strengthened.[84]

83 FOEN, Swiss Landscape Concept (Bern: Federal Office for the Environment (FOEN), 2020), https://www.bafu.admin.ch/bafu/en/home/topics/landscape/publications-studies/publications/swiss-landscape-concept.html.

84 B Kägi, A Stalder, and M Thommen, 'Wiederherstellung und Ersatz im Natur- und Landschaftsschutz.' (Bern, 2022). p.32

Furthermore, the guide[85] includes specific reference to consider local landscape concepts. However, a newer guidance for practice document for the actual evaluation practice[86] places greater emphasis on the assessment of 'natural values' as seemingly 'more objective'. This shift reflects the mistaken assumption that social values cannot be meaningfully assessed.

This example highlights a potential avenue for policy-alignment of biodiversity and place-based landscape values in the UK, but also a cautionary trend: despite initial integrated policy guidelines, there is a risk that practice will increasingly focus solely on natural values, neglecting the broader social and cultural dimensions of landscapes. While the Swiss example has a strong place-based focus, participation is indirect, as it is delegated to the local municipal authorities and via non-governmental organisations. Monitoring of the compensation measures is not mandatory and not financed. Building on this discussion, the final section of this paper reflects how learnings from the English and Swiss BNG context could be harnessed for BNG development in Scotland, as well as BNG policy development at national or regional level elsewhere.

85 Ibid.
86 C. Bühler, K. Wunderle, and S. Birrer, Bewertungsmethode für Eingriffe in schutzwürdige Lebensräume., 2017.

Place-based considerations in the Scottish context

While Scotland has not yet adopted a formal BNG policy, its natural environment has become a 'frontier' for large-scale green finance investment in peatland and woodland for carbon and nature market credits[87]. This context makes lessons from England and Switzerland's BNG experiences particularly relevant for Scotland's policy development. Historical context continues to influence who holds decision-making power over land-use change. The processes of knowledge creation and decision-making in nature recovery policy are shaped by place-dependent social, political, and economic contexts.[88] 'Placeless' governance approaches run the risk of marginalising local knowledge and undermining social environmental justice.[89,90] In Scotland, communities still have limited control over how land is used, managed, and shaped, even though national policy visions increasingly emphasise people-centred and justice-oriented approaches to land use.[91] In Scotland, there are justice concerns around the financialization of nature and large-scale land acquisition for voluntary biodiversity and carbon markets.[92] However, if integrated with place-based approaches that attend to different voices and governance scales, biodiversity offsetting could present opportunities for restorative justice[93]. We outline the following potential areas of opportunity for place-based policymaking for biodiversity offsetting in Scotland. While some elements are context specific, we emphasise the transferability of these lessons and invite policymakers elsewhere to consider how local social and cultural values might be integrated in their own contexts.

Lesson 1: Expanding the biodiversity metric beyond ecologically-centred tools

Although England's reliance on quantitative biodiversity metrics provides consistency in priority setting, it does not integrate social and cultural values. There is thus an opportunity for Scotland to develop context-sensitive approaches that integrate social and cultural values such as place attachment, identity and sense of place and consider how BO affects them (positively or negatively). As identified elsewhere,[94] this will require collaboration between social and biodiversity experts to ensure a wider set of values are included in policy and decision-making. It will be key to ensure that robust quantitative social science assessment metrics are in place, and that these are complemented with qualitative aspects, to enable assessing BNG in a holistic and place-sensitive way. For example, research suggests that incorporating the Gaelic cultural concept of dùthchas, which encompasses sense of place, belonging, and notions of landscape, history, experience, geography and home, could help to foster place-based decision-making by offsetting the dominant narratives used to justify land use change for nature recovery in the Scottish Highlands.[95]

87 C. Helmcke, E. G. Jenkins, and L. E. S. Cole, 'Net Zero and the peatland carbon frontier: contesting incentives for ecosystem restoration in Scotland's Western Isles', Scottish Geographical Journal, 2025, 1–42, doi: 10.1080/14702541.2025.2481146; T. Stanley, 'Carbon "known not grown": Reforesting Scotland, advanced measurement technologies, and a new frontier of mitigation deterrence', Environmental Science & Policy, 151 (2024), 103636, doi: 10.1016/J.ENVSCI.2023.103636.

88 C. Ferreira and J. Ferreira, 'Political markets? Politics and economics in the emergence of markets for biodiversity offsets', Review of Social Economy, 76:3 (2018), 335–51, doi: 10.1080/00346764.2018.1463445; C. Coralie, O. Guillaume, and N. Claude, 'Tracking the origins and development of biodiversity offsetting in academic research and its implications for conservation: A review', Biological Conservation, 192 (2015), 492–503, doi: 10.1016/J.BIOCON.2015.08.036.

89 M. Hulme, 'Problems with making and governing global kinds of knowledge', Global Environmental Change, 20 (2010), 558–64, doi: 10.1016/j.gloenvcha.2010.07.005.

90 E. Turnhout, A. Dewulf, and M. Hulme, 'What does policy-relevant global environmental knowledge do? The cases of climate and biodiversity', Current Opinion in Environmental Sustainability, 18 (2016), 65–72, doi: 10.1016/J.COSUST.2015.09.004.

91 E. Cary and F. Wartmann, 'Rewilding in the British policy landscape. A qualitative analysis of policy documents related to rewilding', Scottish Geographical Journal, 1–2:141 (2024), 113–38, doi: 10.1080/14702541.2024.2322653.

92 K. Sharma et al., 'Glocal woodlands – The rescaling of forest governance in Scotland', Land Use Policy, 126 (2023), 106524, doi: 10.1016/J.LANDUSEPOL.2022.106524; Helmcke, Jenkins, and Cole, 'Net Zero and the peatland carbon frontier: contesting incentives for ecosystem restoration in Scotland's Western Isles'.

93 M. Hannon et al., Carbon Offsetting and Communities: Can Nature-Based Voluntary Carbon Offsetting Benefit Scottish Communities?, Global Change Biology (John Wiley and Sons Inc, 1 December 2022), XXVII, doi: 10.1111/GCB.15873.

94 CIEEM, How Can Good Practice for Biodiversity Net Gain Incorporate People's Wellbeing? Core Messages & Recommendations.

95 D. N. Mhathúna, 'Traditional Ecological Knowledge and the relevance of Dùthchas in Gàidhealtachd Environmental Futures', Scottish Affairs, 30:2 (2021), 251–61, doi: 10.3366/SCOT.2021.0364/FORMAT/EPUB.

Switzerland's experience demonstrates both the potential and pitfalls of integrating cultural values. While their policy framework explicitly includes cultural landscape considerations, practice has increasingly emphasized 'natural values' as supposedly more objective, illustrating how social values can be systematically marginalized even when initially included in policy design. Integrating social values thus requires sustained attention and ideally an assessment of the degree to which it has been achieved.

Lesson 2: Making funding and market mechanisms more place-based

England introduced biodiversity credits and a biodiversity offsetting hierarchy that prioritises local offsetting but provides off-site compensation markets. There is an opportunity for Scotland to ensure that biodiversity offsetting is equity-focused, focussing on providing local benefit and reinvestment in communities rather than allowing biodiversity gains to be outsourced or offset far from impacted communities. For example, this could mean accounting for inequality resulting from the highly concentrated pattern of land ownership through policy design which prioritises BNG delivery through local partnerships, community land trusts, Nature Networks, crofting communities and other place-based organisations and institutions. Drawing on Switzerland's model, this could include establishing spatial proximity requirements that mandate biodiversity compensation measures occur within defined regional boundaries of the development impact. Switzerland's approach requires 'replacement' measures to maintain spatial proximity between development and compensation within a regional framework, ensuring that communities experiencing biodiversity loss also benefit from biodiversity gains. Such proximity requirements could be particularly important in Scotland's context of concentrated land ownership, helping to prevent the displacement of environmental burdens from economically advantaged to disadvantaged areas.

Lesson 3: Ensuring strategic alignment with social justice

There is an opportunity to learn from the spatial justice concerns relating to England's BNG implementation by ensuring strategic policy alignment with Scotland's social justice agenda. This would position the Scottish biodiversity metric as not solely an accounting tool, but as an instrument for nature and community recovery, aligned with plans to address depopulation, land reform, community empowerment and Just Transition principles. For example, integration of BNG with policies which support local job creation, skills training, and wellbeing, could provide a mechanism for building the green economy, enhancing resilience in economically challenged areas.

Conclusion

Biodiversity Net Gain addresses biodiversity loss through ensuring net gain with development, but the policy's focus on ecological impacts overlooks more diverse social and cultural values. Social justice concerns emerge around a lack of place-based considerations that could result in off-site offsets and unequal distribution of where biodiversity might be lost and the communities who bear the wider costs of that loss, compared to where it might be gained and who has a say in how that biodiversity is created.

Scotland's emerging BNG framework presents opportunities to integrate place-based considerations from the outset, learning from England's experience while addressing historical justice concerns. Switzerland's regional approach to biodiversity offsetting offers additional insights for maintaining ecological coherence with place-based policies, particularly through non-legislative policy frameworks like the Swiss Landscape Concept that can integrate cultural and social values without requiring complex legislative reform. However, Switzerland's experience also warns against the tendency for implementation to drift toward purely ecological assessments, highlighting the importance of robust mechanisms to maintain integrated approaches in practice. For example, integration of broader landscape quality objectives that integrate cultural and social values would recognise the contribution of traditional land management practices, such as crofting, to biodiversity objectives, helping to retain distinctiveness of different places and maintain cultural heritage and local identity.

Moving from purely instrumental toward intrinsic, relational, place-based values enables diverse knowledge sources in decision-making. Our discussion of the Swiss approach revealed place-based ambition in policy is not always easily implemented in practice. We highlight how deliberative approaches like visionary methods can help bridge this policy-practice gap by recentring local needs, synthesising diverse knowledges and incorporating wider values. While recognising that different approaches present distinct trade-offs, as a practical pointer for policy makers to successfully include visionary methods in their work, we recommend the establishment of innovative collaborative governance structures to provide an ongoing forum for diverse voices to collectively maintain and develop visions over time. At the local level this could take the form of a citizen's assembly model, or pop-up spaces for civic collaboration,[96] which can successfully build inclusive, sustainable visions which are more resilient to fluxes caused by political cycles.[97]

Moving away from biodiversity as a uniform commodity requires policymakers to expand metrics beyond ecological measures, strengthen local delivery requirements, and ensure strategic alignment with social justice agendas. Only by recognising nature as inseparable from communities can BNG fulfil its transformative potential.

96 Think&Do Camden, 'Camden Pop-Up: Community Space for Climate & Social Action', Think&Do Camden, 2025, https://www.thinkanddocamden.org.uk/ [accessed 25 July 2025].

97 UCL, 'MOIN Case Study: Camden's Citizen-Centric Approach to Missions', Bartlett Faculty of the Built Environment, 2021, https://www.ucl.ac.uk/bartlett/publications/2021/jul/moin-case-study-camdens-citizen-centric-approach-missions [accessed 25 July 2025].

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