Biodiversity Net Gain (BNG) – Policy Evaluation Plan for 2023-2025

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Keywords

Biodiversity Net Gain, Policy, Evaluation.

Acknowledgements

We would like to thank Natural England and Defra for their continued engagement in this Evaluation Programme. We would also like to thank the stakeholders who continue to participate and contribute to our understanding of the BNG policy and its impact, this includes the developers, landowners, local planning authorities, NGOs and others who have participated in stakeholder workshops for the project.

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Foreword from Natural England

Natural England is the government's advisor on the natural environment. We provide practical advice, grounded in science, on how best to safeguard England's nature for the benefit of everyone.

In anticipation of Biodiversity Net Gain (BNG) becoming mandatory through the planning system in November this year (2023), we (on behalf of Defra) have commissioned Eunomia and partners to conduct a policy evaluation covering the initial period of the policy (2023-2025).

Given the considerable changes this period brings for how planning is conducted in England, there will undoubtably be a vast array of experiences across the sector from which we at Natural England, as well as government (both national and local), developers, landowners, and others can learn about how best to ensure development leaves nature in a better state than beforehand.

Evaluation is crucial for learning but also in enabling us to hold ourselves and government to account in terms of policy delivery. We hope that this contract – of which this plan is the first output – will provide us with the insights that Natural England, Defra and all other BNG stakeholders need in order to continue to improve BNG and maximise the benefits for both people and nature.

We understand that evidencing policy impact, especially on nature, will not be easy. This initial evaluation contract is one of a number of initiatives we are exploring to improve our – and the wider sector's – ability to robustly measure the ecological impact of BNG, as well as other complex policies and projects. We are actively engaging with individuals and organisations who can help us do this. If that sounds like you, please do get in touch at the below email address.

It should be noted that this policy-level evaluation work is not intended to scrutinise individual site-level delivery of BNG, nor will its findings be used as a basis for enforcement actions. All future evaluation findings will be anonymised and no identifiable information from individual participants, businesses or organisation will be published without their prior consent. Should readers have enquiries regarding details of the evaluation as set out within this report, please contact the Natural England BNG team on: biodiversity.netgain@naturalengland.org.uk

Finally, Natural England commission a range of reports from external contractors to provide evidence and advice to assist us in delivering our duties. The views in this report are those of the authors and do not necessarily represent those of Natural England. The report's content should not be seen as official BNG guidance or instruction to those working to prepare for mandatory BNG, which can instead be found here.

Gregg Smith
Principal Adviser – Biodiversity Net Gain Monitoring and Evaluation (Natural England)

Executive Summary

The Environment Act (2021) mandates that all required development delivers a minimum of 10% Biodiversity Net Gain (BNG) as a condition of planning permission. The provision for mandatory BNG is expected to come into force for required Town and Country Planning Act developments in November 2023[1], and for nationally significant infrastructure projects (NSIPs) by 2025.

Eunomia, in partnership with GeoData Institute, Louise Tricklebank, Cissbury Consulting, BSG Ecology, and CECAN Ltd, has been commissioned by Natural England to design and deliver an initial Evaluation Programme covering 2023 to 2025. The programme aims to provide high-quality, robust and reliable evaluation evidence to help Defra, Natural England and other BNG stakeholders understand the extent to which the policy is being implemented effectively (process evaluation), is achieving its stated outcomes/objectives (impact evaluation) and is providing a cost-effective means of delivering biodiversity gain (value for money evaluation).

The purpose of this Evaluation Plan is to present a clear, detailed and actionable plan for the evaluation that will follow. Further, the Evaluation Plan will set the foundation – and baseline – for assessing the longer-term impacts of BNG.

The overarching aim of mandatory BNG is to secure a measurable improvement in the extent and value of habitat provision for biodiversity through the planning system, compared to a pre-development baseline, whilst streamlining the planning process (Defra, 2019). Natural England has prepared a Policy Level Theory of Change (ToC), which makes clear the objectives and intended outcomes of BNG.

The evaluation will seek to establish whether these objectives and outcomes are being achieved through answering a suite of evaluation questions relating directly to them, as well as to the activities to implement, barriers to overcome, and capabilities to achieve in order to reach them.

The evaluation programme is underpinned by a number of evaluation principles which cut across the three evaluation types (process, impact, and value for money). Principles include complexity-appropriate and developmental evaluation approaches, taking into consideration the multiple interactions and influences of the policy and wider system which BNG sits within, as well as ensuring findings of the evaluation are fed back into both the evaluation design and the policy development.

A mix of qualitative and quantitative methods will be employed to answer the evaluation questions. Methods include a deep dive programme, participatory systems mapping, data

[1] Except for small site developments which will be granted a six-month delay (to April 2024).

and document reviews, cost-benefit analysis, thematic analysis, and other analyses (e.g., statistical, geospatial) all underpinned by both primary and secondary data collection. By using a mixed-methods approach, findings can be triangulated to strengthen the results and recommendations of the final evaluation reports.

Interviews, surveys, focus groups and workshops will be employed to collect qualitative data, while a number of data sources including the register and LPA planning portals will be utilised to obtain quantitative data for analysis. A number of limitations exist which will affect the extent to which the results may be representative, however there is the assumption that as BNG policy and associated tools evolve, richer and more comprehensive data may become available for the purposes of evaluation.

The Evaluation Programme is set to run until March 2025 and covers the set-up of the BNG system by Natural England, mandatory BNG coming into force and the initial period of its implementation. Alongside this Evaluation Plan, other key reports will be published throughout the course of delivery of the programme, with a final evaluation report for this period expected to be produced in February 2025. These outputs will hopefully enable Natural England and Defra to amend and improve BNG delivery mechanisms.

Contents

List of Acronyms

Acronym	Meaning
ALGE	Association of Local Government Ecologists
BNG	Biodiversity Net Gain
CIEEM	Chartered Institute of Ecology and Environmental Management
EcIA	Ecological Impact Assessments
EQ	Evaluation Question
HMMP	Habitat Management and Monitoring Plan
HMLR	His Majesty's Land Registry
IMD	Index of Multiple Deprivation
LERC	Local Environmental Records Centre
LPA	Local Planning Authority
LNRS	Local Nature Recovery Strategy
M&E	Monitoring & Evaluation
NGO	Non-Governmental Organisation
NNL	No Net Loss
NPPF	National Planning Policy Framework
NPV	Net Present Value
NRN	Nature Recovery Network
NSIP	Nationally Significant Infrastructure Project
ONS	Office for National Statistics
PSM	Participatory Systems Mapping
QCA	Qualitative Comparative Analysis
SANG	Suitable Alternative Natural Green Space
SG	Steering Group
SPD	Supplementary Planning Document
SPG	Supplementary Planning Guidance
TAN	Technical Advice Note
ToC	Theory of Change
VfM	Value for Money

1. Introduction

1.1. Purpose of the Evaluation Programme

The Biodiversity Net Gain (BNG) policy, as introduced in the Environment Act (2021), mandates that all required developments[2] in England deliver at least a 10% uplift (or 'net gain') in biodiversity compared to a pre-development baseline. The policy is expected to become mandatory in November 2023.

Informed by previous work to produce an Evaluation Framework for BNG in 2021 (Collingwood Environmental Planning, BSG Ecology, GeoData Institute, CECAN and Vivid Economics, 2021), Natural England commissioned Eunomia (authors of this report) to design and deliver an actionable programme of evaluation for mandatory BNG in England. The Evaluation Programme will provide high-quality, robust, and reliable evaluation evidence to help Defra, Natural England and all other BNG stakeholders including developers and local planning authorities (LPAs) to understand the extent to which the BNG policy is being implemented effectively (process evaluation), is achieving its intended outcomes (impact evaluation), and is providing a cost-effective means of delivering biodiversity gain (value for money evaluation).

1.2. Structure of the Evaluation Plan

This Evaluation Plan covers the first stage of the Evaluation Programme. Its purpose is to present a clear, detailed, and actionable plan for the evaluation of BNG, during this initial stage.

The Evaluation Plan takes into consideration the changes and clarifications that have arisen since the Environment Act (2021) came into force, and all content was correct at time of writing. Further, the Evaluation Plan has been informed by engagement with stakeholders both within and outside Natural England and Defra, as well as other stakeholders including LPAs, developers and associated consultants, landowners, academics and environment and community focused non-governmental organisations (NGOs).

[2] Bar exemptions, including permitted development, urgent crown development, sites containing an area below 25m² (or 5m for linear habitats), householder applications and developments undertaken exclusively for registered biodiversity gains.

The structure includes:

- A **Background to BNG** policy, including the key policy objectives, the wider UK environmental policy landscape within which BNG sits, and the key BNG stakeholders.
- The **Theory of Change** developed by Natural England that underpins the BNG system. This details how the activities undertaken will lead to the policy achieving its intended outcomes.
- An **Evaluation Design** that sets out the principles on which our Evaluation Programme is based. This section presents a set of key evaluation questions (EQs) that will guide the gathering of evidence for the BNG process evaluation, impact evaluation, and value for money evaluation.
- The **Evaluation Methods and Tools** that will be employed to answer the key evaluation questions developed as part of the Evaluation Programme. This includes the different data collection and analysis approaches to be used throughout the Evaluation Programme.
- An **Approach to Developing the Baseline**, including the key data sources we have identified and the approach and methods we will be using to collect and analyse the data from these sources, in order to establish a baseline.
- An outline of the key **Tasks** which will be delivered as part of the Evaluation Programme.
- An outline of the key **Risks and Limitations** of the Evaluation programme and the mitigating actions that have been put in place to manage and minimise these.
- An overview of how good **Governance** is being used to support the Evaluation Programme, including how stakeholders have informed the preparation of this plan through workshops, and how they will continue to contribute to the evaluation, for example through data collection processes such as surveys, interviews, workshops and focus groups.

2. Biodiversity Net Gain

2.1. Background to BNG

2.1.1. Context

The immediate context of the BNG intervention is that the current planning system fails to place a value on the impact of a range of environmental externalities of development, thereby allowing environmental damage from development. The UK Government's 25 Year Environment Plan (HM Government, 2018) sets out how the government will achieve its ambition to leave the environment in a better state than it inherited it for the next generation. It also includes a commitment to mainstream the use of BNG interventions within the planning system and to reconcile biodiversity conservation with economic development to address the problem of biodiversity loss and deterioration as a result of development in England.

The requirement for BNG has been included in the National Planning Policy Framework since 2012, and although strengthened in planning policy since, it had not been included in legislation until the Environment Act came into force in 2021. Under this Act, all required developments[3] will be required to deliver a minimum of 10% net gain in biodiversity compared to a pre-development baseline, as measured using the statutory biodiversity metric[4], as a condition of planning permission. The provision for mandatory BNG is expected to come into force for required Town and Country Planning Act developments in November 2023, and for nationally significant infrastructure projects (NSIPs) by 2025.

The Environment Act also sets out the following key components to mandatory BNG including:

- The requirement that measurable habitat gains will need to be secured for at least 30 years via planning obligations or conservation covenants;
- The routes for post-development BNG delivery, as follows; on-site delivery, off-site delivery or, as a last resort via statutory biodiversity credits; and
- The provision of a national register for BNG gain sites and a system to sell statutory biodiversity credits.

The Act also strengthens the legal duty for public bodies to conserve and enhance biodiversity and requires the production of Local Nature Recovery Strategies (LNRS) identifying priorities, opportunities, and measures to deliver nature recovery at a sub-regional level. It legislates at a local authority level[5] at least a 5-yearly Biodiversity Reporting requirement which will include a summary of actions taken under the BNG policy[6].

LNRS are provided for in a separate part of the Act. Their aim is to reverse the loss of habitat and the decline of species in England, by mapping where important habitats can be conserved, restored and connected (UK Parliament, 2021). It is required that LNRS reflect the key principles of the ‘Making Space for Nature’ Report (Lawton, et al., 2010) which guided thinking on how to halt biodiversity loss through ‘more, bigger, better and joined up’

[3] Exemptions include permitted development, urgent crown development, sites containing an area below 25m² (or 5m for linear habitats), householder applications, and developments undertaken exclusively for registered biodiversity gains.

[4] The most recent version, Biodiversity Metric 4.0, was published in March 2023 replacing ver. 3.1 from April 2022. The metric uses changes in the extent and quality of habitats as a proxy for nature and compares the habitat found on a site before and after development.

[5] Including all local authorities and local planning authorities, but excluding parish councils, and may include other authorities designated by the Secretary of State.

[6] “Information about any biodiversity gains resulting or expected to result from biodiversity gain plans approved by the authority during that period” under s40 of the NERC Act 2006 as amended by s103 (4b) of the Environment Act 2021.

ecological networks. LNRSs will be supported through the statutory biodiversity metric by a strategic significance multiplier which increases biodiversity units where habitat is cited within an LNRS or Local Plan.

2.1.2. Objectives

The overarching aim of mandatory BNG is to secure a measurable improvement in the extent and value of habitat provision for biodiversity through the planning system, compared to a pre-development baseline, whilst streamlining the planning process (Defra, 2019). Natural England has prepared a Policy Level Theory of Change (ToC), within which there are two objectives of BNG:

1. All required developments in England provide a net gain in biodiversity in ways that support local nature recovery priorities; and

2. Mandatory BNG provides a standardised approach through which development delivers BNG with increased ease, consistency and transparency.

BNG is intended to support the existing mitigation hierarchy, rather than replace it, helping to demonstrate and document how new developments have aimed to avoid and minimise any negative impacts on habitats as far as possible, restored impacts that are immediately reversible, and where not possible to avoid or restore habitats, considered offsetting residual impacts.

While the BNG intervention is primarily focused on habitat creation and enhancement, the policy should help to deliver several additional/unintended social, economic, and environmental outcomes and benefits. These are likely to include, but not be limited to:

- the increased generation of and access to biodiversity data in the planning system;
- the creation of green jobs;
- increased investment in nature's recovery; and
- the increased ability for farmers and other landowners to diversify income.

The objectives of BNG are outlined further in the Theory of Change described later in the Evaluation Plan.

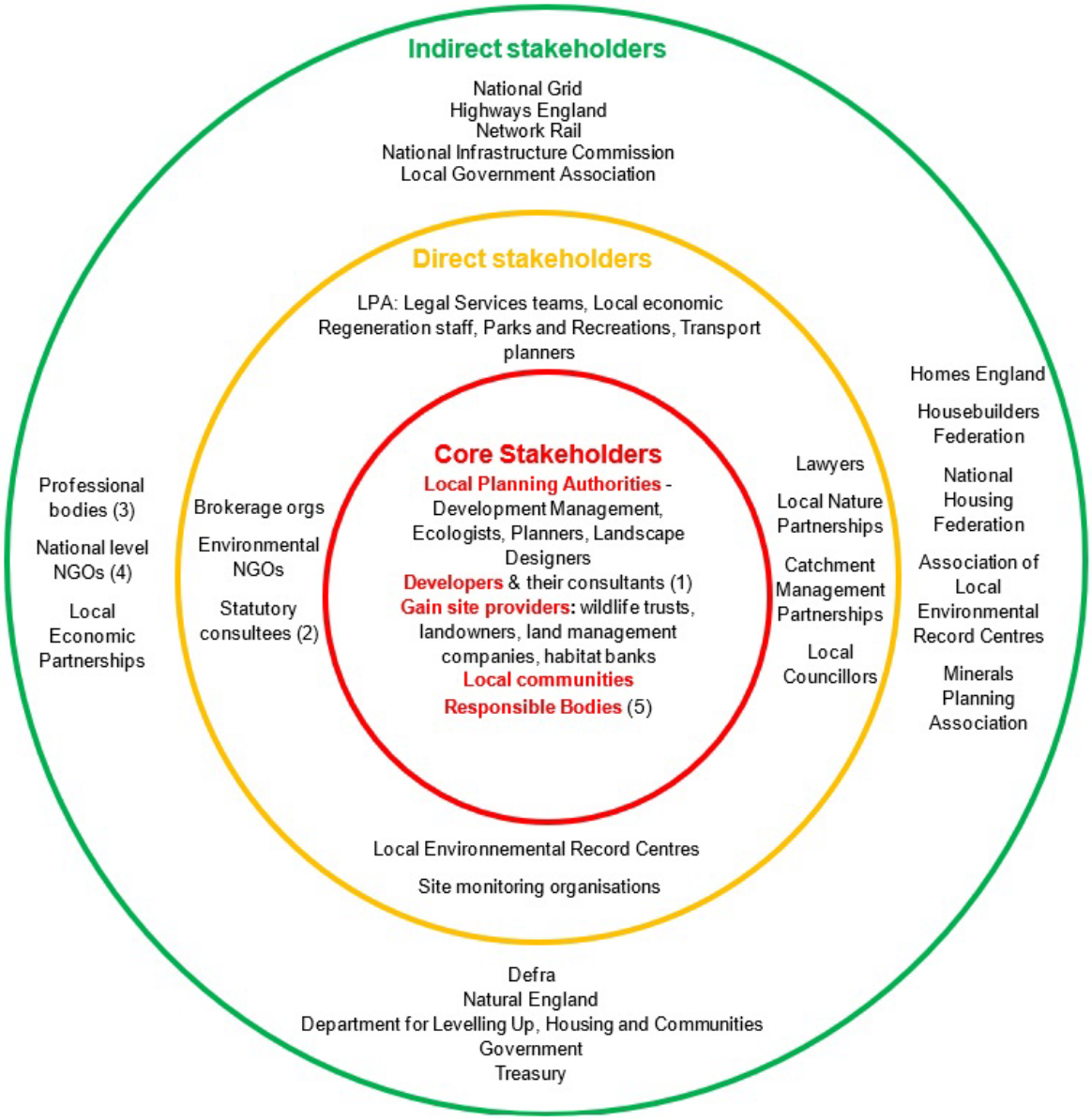
2.1.3. Key Stakeholders

A wide range of stakeholders have an interest in the implementation of mandatory BNG in England. Stakeholders include those who are directly or indirectly involved in the design, implementation, and maintenance of BNG, in addition to those affected by, or who have an interest in a development's biodiversity activities. Some of the key stakeholders are shown in Figure 1 below in three groupings:

- **Core**: those who have a responsibility for delivery;
- **Direct**: those who will feed in directly to delivery; and
- **Indirect**: those who will feed in indirectly to delivery.

How these stakeholders interact within the wider BNG system is covered in more detail in Section 2.2. Engaging these stakeholder groups is vital at all stages of the Evaluation Programme. This includes to provide evidence on how BNG is being implemented and its impacts. Stakeholders will also have a significant role in assessing how effective the policy has been in achieving its goals and in drawing out lessons for future improvements.

Figure 1: Stakeholders in BNG intervention



Key

1) Types of consultant would include ecological, civil engineers, landscape architects, air quality specialists etc.
2) Statutory consultees to the planning process e.g., Environment Agency, Forestry Commission
3) Professional bodies e.g., Chartered Institute of Ecology and Environmental Management, Institute of Environmental Management and Assessment, Chartered Institution of Water and Environmental Management, and Royal Institution of Chartered Surveyors etc.
4) National NGOs e.g., CPRE – The Countryside Charity, Friends of the Earth, The Royal Society for the Protection of Birds, and The Rivers Trust etc.
5) The designated bodies with whom a landowner can establish a conservation covenant.

2.2. Elements of the BNG System

This section provides a high-level overview of the key elements which make up the BNG system and the exchanges between the main groups using the system. These groups include local authorities, Natural England, developers (and their consultants), landowners (and their consultants), habitat banks/brokers, as well as agencies such as His Majesty's Land Registry (HMLR). There are likely to be other stakeholders involved which are displayed in Figure 1. These could include, for example, responsible bodies, Local Environmental Record Centres, professional bodies and agencies that are providing guidance and advice to the implementation of the process such as the Chartered Institute of Ecology and Environmental Management (CIEEM) and the Local Government Association's Planning Advisory Service.

The system is subject to some uncertainty as many aspects are still in development or are dependent on further clarification. For example, some aspects may be detailed in secondary legislation produced or in further guidance published, such as the guidance on the definition of irreplaceable habitats.

The first BNG element in a developer's planning application is the completion of a **Habitat Survey and Condition Assessment** which will be completed using the **statutory biodiversity metric** (currently, Biodiversity Metric 4.0 or the small sites metric) produced by Natural England.

The **statutory biodiversity metric** is a tool for auditing and accounting for biodiversity losses and gains, covering area terrestrial and inter-tidal habitat types, as well as linear hedgerow and watercourse habitat types. It uses habitats as a proxy measure for biodiversity and translates habitat value into individual units. It can be used to establish a baseline for a development site and forecast a proposed outcome associated with specified changes. The use of a standardised approach and measure provides confidence and consistency, and it also helps to improve communication of biodiversity outcomes to non-technical audiences.

BNG is intended to reinforce the principle that environmental harm resulting from a development should be avoided where possible, adequately mitigated, or, as a last resort, compensated for (MHCLG, 2021). It requires development to increase biodiversity by a minimum of 10% compared to the baseline.

Developers are required to provide a **biodiversity gain statement** containing biodiversity gain information alongside a planning application, before submitting a **biodiversity gain plan** prior to commencement of works. Should a developer have all the information required to complete a biodiversity gain plan prior to receiving planning permission, they may submit the full biodiversity gain plan alongside a planning application and remove the need for a biodiversity gain statement. The biodiversity gain plan should present the baseline for the development site, describe what the developer intends to do to achieve the minimum net gain and detail the post-development biodiversity value of on-site or off-site habitat creation or enhancement.

If a developer cannot compensate on-site, they may achieve BNG by using off-site land, or, as a last resort, buy statutory credits for BNG from the statutory credits scheme. This is being developed and is to be administered by Natural England. If statutory biodiversity credits are bought, the credits will be used to invest in biodiversity creation and enhancement at the national level.

Local authorities will be responsible for reviewing and verifying biodiversity gain plans, and for the enforcement of duties pertaining to BNG[7]. Local authorities can also provide supplementary planning documents (SPDs), or guidance documents i.e., supplementary planning guidance (SPG) or Technical Advice Notes (TANs), to specify local requirements for BNG. Local authorities may choose to set their own local requirements (e.g., minimum net gain percentage and monitoring and enforcement requirements) provided they are additional to national legislative requirements.

It is important to be aware that some local authorities are modifying the procedures, documents and data requirements and data storage within their guidance notes or supplementary planning documents on BNG. Some local authorities for example are introducing additional conditions and requirements on the developer, such as the requirement to provide a higher proportion of net gain.

A **BNG Habitat Management and Monitoring Plan (HMMP)** details how an on-site and off-site BNG habitat will be legally secured, managed and monitored over a thirty-year period. Natural England is currently developing a template for HMMPs. Both plans (biodiversity gain plan and the HMMP) will need to be approved by the relevant local authority prior to any development being undertaken. If a developer is to achieve BNG through off-site provision, the developer can identify available sites via the local authority, or through commercial or publicly owned habitat land banks and brokerage services, as well as **the Register** (although this will not act as a trading system). The HMMP sets out the timing and nature of the post-development site monitoring which is reported via the **BNG Monitoring Reports.**

The Register (in the 2021 Environment Act referred to as 'biodiversity gain site register')**,** developed and managed by Natural England, will hold records of land used for off-site biodiversity gain. On site information will be included in local planning registers within planning application information. The Register will be publicly accessible. Landowners who wish to bring forward individual parcels of land to contribute toward off-site biodiversity gain must also complete a habitat survey and condition assessment using the statutory biodiversity metric to formulate a **HMMP,** with the information submitted to the **Register**.

[7] Except where a Conservation Covenant is used, in which case the Responsible Body (which may or may not be a Local Authority) will be responsible for enforcement.

The provision of **statutory biodiversity credits** is a mechanism provided by the Secretary of State as a last resort option for developers to meet their biodiversity net gain obligations where they have been unable to secure this through the creation and/or enhancement of habitat on-site or off-site.

Statutory biodiversity credits will be sold by Natural England on behalf of the Secretary of State, and Natural England's BNG Digital Services team is devising and developing the Statutory Biodiversity Credit Sales Service to administer these credits. Whilst the statutory biodiversity credits scheme is designed and administered by Natural England, it is up to the local authority to decide if off-site provision is not feasible (i.e., if there is a lack of suitable off-site land available to deliver the required BNG for the site) based on the evidence submitted by the developer. The money received from the sale of statutory biodiversity credits will be invested in strategic habitat creation and enhancement projects.

LPAs play a central role in delivering BNG through the planning system. Some LPAs are already preparing for when BNG becomes a mandatory requirement in November 2023, for example by:

- developing approaches to embed BNG in local planning policy and decision-making and considering how BNG could support their strategic priorities by delivering a wide range of benefits for local people and nature;
- identifying features and areas for habitat creation and enhancement within strategic plans and/or Local Nature Recovery Strategies to target BNG delivery where it is most needed and can have the greatest impact;
- exploring options for delivering net gain on both LPA owned and privately owned land.

3. Theory of Change (ToC)

A theory of change (ToC) explains how a given intervention, or set of interventions, are expected to lead to a specific change or impact, drawing on a causal analysis based on available evidence (UNDG, 2017). A ToC can therefore be very helpful in understanding how an intervention is expected to work in practice and are often used to guide and inform evaluations.

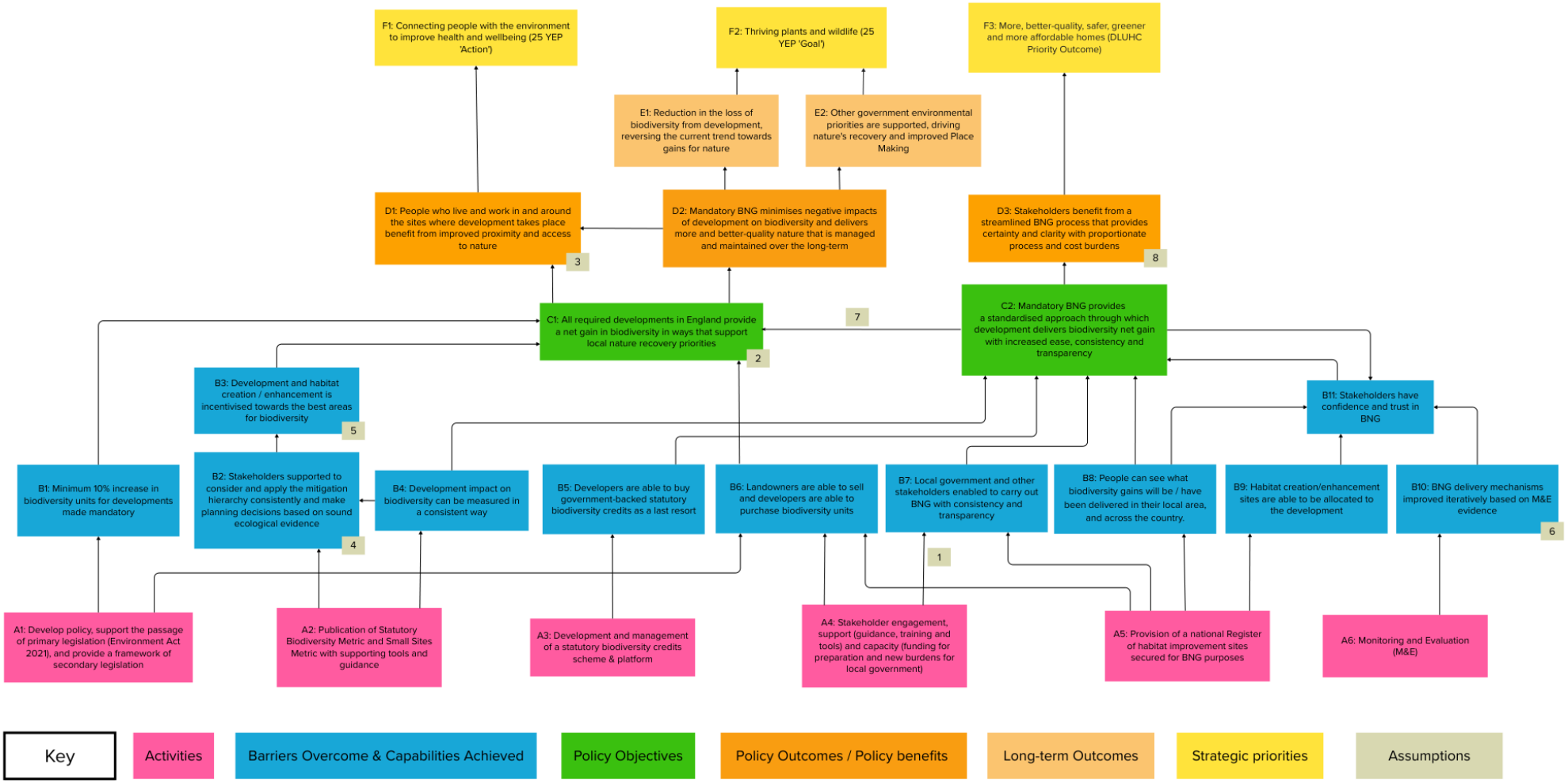
Figure 2 presents a ToC for BNG developed by Natural England alongside the ToC narrative presented in Section 3.1.

In developing the BNG Evaluation Programme, discussions about the ToC has allowed Natural England and the evaluation team to clarify understandings of the components of BNG, how mandatory BNG is expected to work in practice, the relevant actors and relationships between them and the causal chains of events expected to bring about the intended outcomes. The ToC has been modified as a result of these discussions as well as inputs from other stakeholders.

The ToC was central to the development of the EQs (presented in Section 4), the two policy objectives (presented in green) and the policy outcomes (presented in orange) in particular.

It should be noted that with ongoing evaluations the ToC are most effective when treated as ‘live’ documents, meaning that they continue to be updated and refined as the understanding of an intervention progresses. Review points, in which the ToC will be updated or refined based on increased understanding of how change happens, will be established. These reviews will give evaluators and decision-makers clarity about the framing and focus of each stage of the evaluation.

Figure 2: BNG Policy Theory of Change. Section 3.1 describes each element (box) of the diagram in detail



Context

The current planning system fails to place a value on the impact of a range of environmental externalities, leading to an increased tendency towards environmental damage from development. Considering recent trends, pressure on land, habitat and biodiversity is likely to increase.

Additional / unintended outcomes and benefits:

- Increased generation of and access to biodiversity data in the planning system
- Creation of green jobs
- Increased investment into nature's recovery
- Increased ability for farmers and other landowners to diversify income.

Assumptions (Figure 2, numbered boxes 1-8):

1. The support is sufficient to aid and support users' understanding of BNG; the increase in capacity is sufficient to enable local government to implement BNG appropriately.
2. A Local Nature Recovery Strategy (LNRS) (or similar) exists and the Statutory Biodiversity Metric's strategic significance multiplier is strong enough to influence decisions.
3. Nature is close to where people live and work and is accessible.
4. Stakeholders understand and use the Statutory Biodiversity Metric as set out in the guidance.
5. The risk multipliers within the Statutory Biodiversity Metric are appropriately weighted to support the mitigation hierarchy and sound ecological decisions; The mitigation hierarchy is followed and LPAs understand the grounds for rejection of a planning application when the mitigation hierarchy has not been applied in reference to BNG.
6. M&E findings are shared and used in such a way to enable iterative improvements.
7. Stakeholder (external to Defra/NE) initiatives and tools contribute to effective BNG implementation.
8. Stakeholders follow all guidance and consider biodiversity earlier within the planning process than they would have done pre-mandatory BNG.

The Theory of Change presented in Figure 2 will be reviewed and updated periodically by Natural England to ensure that it reflects the state of BNG policy and its intended outcomes. Alongside the Theory of Change Natural England have been working separately to produce a systems map to explore the complexity of the system in which BNG sits. Natural England intentionally limited the activities presented within this Theory of Change to those conducted by NE and Defra only, with the idea that wider BNG landscape activities will be addressed in the ongoing systems mapping.

3.1. ToC Narrative

The Theory of Change narrative below describes each element (box) of the Theory of Change diagram in more detail, its linkages to other elements and associated assumptions.

Activities (A):

- **A1: Develop policy, support the passage of primary legislation (Environment Act 2021), and provide a framework of secondary legislation:** Collaborative work across government to develop, support and guide the passage of the Environment Act 2021. Statutory Instruments are being developed to create a framework of secondary legislation which supports and provides further clarity to aspects of the primary legislation such as the register and exemptions. Further, a suite of guidance including, but not limited to, additionality, stacking and bundling, alignment to wider planning and biodiversity reforms is also in development.
  A1 leads to B1 and B6.
- **A2: Publication of Biodiversity Metric and Small Sites Metric with supporting tools and guidance:** The design and development of the Biodiversity Metric (versions 2.0, 3.0, 3.1, 4.0) by Natural England. This has been a work in progress evolving from work conducted on the 2012 Biodiversity Offsetting Pilot Metric and been through multiple design iterations, as well as public consultation. Additional supporting tools have also been developed, i.e., the GIS template and Import tool, and a number of case studies. Alongside the Biodiversity Metric, Natural England have developed and published a suite of guidance and principles for the use of the Metric and supporting tools.
  A2 leads to B2 and B4.
- **A3: Development and Management of a Statutory Biodiversity Credits Scheme and Platform:** Defra is supporting the growth and effective regulation of the biodiversity unit market (supporting green finance on investment readiness activity and working with the development sector and habitat providers/brokers). Using provisions in the Environment Act 2021, Defra is setting up arrangements to sell Statutory Biodiversity Credits to developers as a last resort where there are no biodiversity units available on the market to prevent planning delay and will conduct regular reviews of the price of Statutory Credits. Natural England have designed and developed the Statutory Credits Sales Platform which will facilitate the sale of Statutory Biodiversity Credits to developers. Natural England have undertaken a credit pilot with landowners. The outputs have helped to form advice to Defra on the possible design for the delivery of the future scheme according to policy objectives.
  A3 leads to B5.
- **A4: Stakeholder engagement, support (guidance, training, and tools) and capacity (funding for preparation and new burdens for local government):** Development of a strategic engagement and communications plan, which sets out the range activities related to stakeholder engagement and communications which will be rolled out up to and following mandatory BNG. Organisation and delivery of a range of stakeholder activities including webinars, conferences, and internal newsletter articles. In addition, Natural England have developed and delivered training and support for BNG stakeholders and users to aid understanding of BNG implementation processes and the Biodiversity Metric. Defra have engaged with,

consulted on and delivered funding for BNG preparation and new burdens for Local Government to provide additional ecologist resource to support set up of the BNG system alongside provision of advice, training, guidance, and peer support. Alongside this, Defra have commissioned PAS to help prepare Local Planning Authorities for BNG. Natural England has developed and published a suite of guidance related to BNG.
A4 leads to B6 and B7. The link between A4 and B7 has assumption 1.

- **A5: Provision of a national Register of habitat improvement sites secured for BNG purposes:** Setting up a new register of habitat improvement sites. The new register service will provide assurance externally that biodiversity gain sites away from the development are not double counted with other gain sites and hold the legal mechanism to bind gain sites to the original development. This activity is split into two parts: the Biodiversity Gain Site Register, including an application process and a public-view platform; and a case management system to support the application and verification process and employed and trained a team of operators who will verify and approve/ reject applications as appropriate.
  A5 leads to B6, B7, B8 and B9.
- **A6: Monitoring and Evaluation (M&E):** Natural England have commissioned an external contractor (Eunomia) to design and conduct a policy-level evaluation of BNG. This will consist of process, impact and value for money evaluations. Natural England will encourage and support both internal and external collaboration across the internal teams and the external evaluation contractor to ensure findings from M&E are incorporated into ongoing work and development of BNG tools, guidance and systems.
  A6 leads to B10.

Barriers overcome and Capabilities achieved (B):

- **B1: Minimum 10% increase in biodiversity units for developments made mandatory:** BNG policy will mandate that all required developments produce a minimum of 10% net gain in biodiversity post-development. Prior to BNG policy the National Planning Policy Framework (NPPF, 2021) recommended '*Planning policies and decisions should contribute to and enhance the natural and local environment by…minimising impacts on and providing net gains for biodiversity,'*. Previous policy did not mandate a level of net gain (i.e., minimum 10% gain) or provide clear guidance to challenge those developments which were not designing and delivering a net gain in biodiversity. BNG sets a minimum level of biodiversity gains to be achieved by all required developments and provides LPAs and Responsible Bodies with the authority to decline planning applications for (required) developments which have not achieved this minimum biodiversity net gain requirement.
  B1 leads to C1.
- **B2: Stakeholders supported to consider and apply the mitigation hierarchy consistently and make planning decisions based on sound ecological evidence:** Guidance provided on the implementation of BNG and the user guide for the Biodiversity Metric will support the consistent use of the mitigation hierarchy within planning decisions, detailing how BNG should be considered firstly on-site (avoid), then off-site (mitigate) and finally through the statutory credits scheme (compensate). Furthermore, in order to complete the Biodiversity Metric calculations

(excluding for the Small Sites Metric) a condition assessment of the habitats on-site must be completed by a competent ecologist, supporting the collection of ecological evidence and application of ecological judgement in the planning process.
B2 has assumption 4 and leads to B3.

- **B3: Development and habitat creation/enhancement is incentivised towards the best areas for biodiversity:** The Biodiversity Metric is designed to incentivise development away from locations which are of high biodiversity value, based on multipliers within the metric resulting in higher baseline scores for habitats which are of higher biodiversity value, making it more costly for developers to achieve minimum 10% BNG post-development. The design of the metric also aims to incentivise habitat creation/enhancement towards locations and/or habitat outcomes which will produce the greatest gains for biodiversity through weighting post-development scores higher where creation or enhancement is aligned with local plans and focuses on habitats of greater local strategic significance.
  B3 has assumption 5 and leads to C1.
- **B4: Development impact on biodiversity can be measured in a consistent way:** The required use of the Statutory Biodiversity Metric will provide consistency among planning applications and a means of comparing applications and the impact upon biodiversity by different developments.
  B4 leads to B2 and C2.
- **B5: Developers are able to buy government-backed Statutory Biodiversity Credits as a last resort:** The Statutory Credits Scheme provides developers with a last-resort option for fulfilling their BNG requirements when not possible to fully achieve a minimum 10% BNG on-site or off-site through the private biodiversity market. Furthermore, the availability of a last resort option aims to reduce the potential for planning delay.
  B5 leads to C2.
- **B6: Landowners are able to sell, and developers are able to purchase biodiversity units:** The Biodiversity Metric provides a mechanism by which developers can understand and quantify the amount of biodiversity units they need to purchase (if not achieved minimum 10% BNG on-site) as well as providing a mechanism by which landowners can understand and quantify the number of biodiversity units they have to sell within the market. By developing and publishing guidance and principles of BNG implementation, guidance on stacking and bundling and guidance for landowners, landowners are provided with the information needed to sell biodiversity units within the private market. Developers also receive the guidance needed to understand their requirements and engage with landowners to purchase biodiversity units within the private market.
  B6 leads to C1.
- **B7: Local government and other stakeholders enabled to carry out BNG with consistency and transparency:** Funding, training and guidance for Local

Government will enable BNG policy to be implemented consistently[8] across Local Authorities and with transparency through reporting requirements placed on Local Government. Furthermore, training and guidance published alongside BNG tools (digital and metric) will support stakeholders to implement BNG practices and principles into planning design consistently.
B7 leads to C2.

- **B8: People can see what biodiversity gains will be/have been delivered in their local area, and across the country:** The Register will allow people to see what off-site biodiversity gains have been legally secured for delivery within their local area and across the country. Currently the government does not intend to mandate registration of on-site gains on the register, however Defra is exploring how on-site information can be extracted from planning permissions and published on the register in the longer-term. In the meantime, people will be able to see what BNG is secured locally through local planning registers.
  B8 leads to B11 and C2.
- **B9: Habitat creation/enhancement sites are able to be allocated to the development:** Verification checks completed by the Register Operator will include ensuring that the habitat is not being used for another enhancement. This will provide assurance to stakeholders that there is no double-counting of off-site Biodiversity Gain sites.
  B9 leads to B11.
- **B10: BNG delivery mechanisms improved iteratively based on M&E evidence:** Feedback loops will be incorporated into the M&E programme, which will ensure that relevant evaluation findings can be fed back into the ongoing management of BNG delivery mechanisms to facilitate recommendations for continuous improvement.
  B10 has assumption 6 and leads to B11.
- **B11: Stakeholders have confidence and trust in BNG:** It is anticipated that the transparency provided by the publication of evaluation evidence and the ability to see biodiversity gains on the Register will encourage stakeholders to have confidence and trust in BNG. This will be further strengthened by the consistency provided by the Biodiversity Metric, training (provided externally from NE and Defra) and guidance.
  B11 leads to C2.

Policy Objectives (C):

- **C1: All required developments in England provide a net gain in biodiversity in ways that support local nature recovery priorities:** Through the mandatory minimum 10% uplift, all required developments will provide a net gain in biodiversity. The Biodiversity Metric multiplier for strategic significance will incentivise the user to provide gains which reflect local habitat outcomes in locations that support the Local

[8] It is acknowledged that in the initial period of BNG policy becoming mandatory there may be inconsistencies in the ways in which BNG policy is applied due to discrepancies between LPAs around how prepared they are for BNG and the level of planning and ecological resource they have available.

Plan or LNRS priorities. Guidance also encourages habitat creation and enhancement which aligns with local nature recovery priorities.
C1 has assumption 2 and leads to D1 and D2.

- **C2: Mandatory BNG provides a standardised approach through which development delivers biodiversity net gain with increased ease, consistency, and transparency:** The Biodiversity Metric provides a standardised approach to quantifying biodiversity within the planning process, using habitat as a proxy for biodiversity and assigning values based on the habitat type, condition, and location. This standardised approach increases the ease of delivering BNG for developers by providing them with a consistent process by which they can follow in order to discharge their planning condition in relation to BNG. Quantifying the value of biodiversity through the Biodiversity Metric creates a common language among ecologists and developers, making it easier to discuss and consider biodiversity within the planning process. The Register will increase transparency through highlighting where gains have been planned and delivered.
C2 leads to B11, C1 and D3. The link between C2 and C1 has assumption 7.

Policy Outcomes/ Policy Benefits (D):

- **D1: People who live and work in and around the sites where development takes place benefit from improved proximity and access to nature:** Required development will be encouraged to achieve minimum 10% BNG on-site, creating areas of biodiversity value on and around the sites where development takes place. Following the mitigation hierarchy, if a development cannot achieve minimum 10% BNG on-site they are encouraged to firstly look for local off-site areas to achieve the difference, maintaining a pool of habitat creation/enhancement areas within a locality. Other projects within Natural England have highlighted an increased value of green spaces to people and local communities (e.g. People and Nature Survey), especially following the COVID-19 pandemic and in urban areas. Through maintaining and increasing a pool of habitat creation/enhancement areas in a locality, BNG policy is ensuring that the intrinsic and societal benefits such as better mental wellbeing associated with access and proximity to nature is provided for local communities who live near to where development takes place in both urban and rural areas.
D1 has assumption 3 and leads to F1.
- **D2: Mandatory BNG minimises negative impacts of development on biodiversity and delivers more and better-quality nature that is managed and maintained over the long-term:** Negative impacts of development on biodiversity will be minimised through the mandatory minimum 10% uplift. Off-site and significant on-site biodiversity created/enhanced through BNG policy must be managed and maintained for a minimum of 30 years, at this point a new baseline must be produced should the land be proposed for new development, preventing degradation of the land post the 30-year management period.
D2 leads to D1, E1 and E2.
- **D3: Stakeholders benefit from a streamlined BNG process that provides certainty and clarity with proportionate process and cost:** BNG policy and associated tools and guidance aim to create a common language between developers and ecologists, aiding in design and planning of development that is sensitive to biodiversity. BNG policy has been designed to encourage stakeholders to bring biodiversity to the forefront of planning decisions, as opposed to the current

situation where ecology and biodiversity are often an afterthought within the design of developments. Further detail on the content of the secondary legislation and guidance will provide certainty and clarity around the process and legal requirements which developers will need to follow to incorporate the design and implementation of BNG into their own existing planning processes.
D3 has assumption 8 and leads to F3.

Long-term Outcomes (E):

- **E1: Reduction in the loss of biodiversity from development, reversing the current trend towards gains for nature:** BNG aims to reduce the loss of biodiversity and create biodiversity gains on development sites and/or off-site locations. The switch from reduction in loss (No Net Loss in the NPPF) to creation of biodiversity gains will contribute to changing the trend of biodiversity towards gains for nature.
  E1 leads to F2.
- **E2: Other government environmental priorities are supported, driving nature's recovery and improved Place Making:** Current priorities are focused on improving the connectivity of habitat enhancement and recovery through the Local Nature Recovery Strategies (LNRSs) and Nature Recovery Networks (NRNs). LNRSs will be supported through the Biodiversity Metric by a strategic significance multiplier which increases biodiversity units where habitat is cited within an LNRS or Local Plan. LNRS's aim to help the public, private and voluntary sectors work more effectively together for nature's recovery. BNG will drive investment in nature from the development sector, whilst the strengthened 'biodiversity duty' will make sure the public sector plays a leading role. NRN aims to join up and create a 'network' of wildlife-rich places to increase and restore nature. BNG policy will create pockets of increased biodiversity and through careful planning will contribute to the network as habitats are joined up across areas and nationally.
  E2 leads to F2.

Strategic Priorities (F):

- **F1: Connecting people with the environment to improve health and wellbeing (25 YEP 'Action'):** BNG implementation and delivery will aim to contribute towards this action from the government's 25 Year Environment Plan by encouraging the delivery of habitat enhancement, such as green infrastructure and increased provision of green space, close to where people live and work.
- **F2: Thriving plants and wildlife (25 YEP Goal):** BNG will support this 25 Year Environment Plan goal by ensuring that development provides a net gain in biodiversity through retention of important habitats, creation of new habitat and enhancement of existing habitats, which will be managed and maintained over a 30-year period. Furthermore, BNG aims to contribute to the creation of a network of land, water and coast that is richer in plants and wildlife through encouraging developers to enhance and create biodiversity gains within areas highlighted within local plans and LNRSs through the Biodiversity Metric's strategic significance multiplier.
- **F3: More, better-quality, safer, greener, and more affordable homes (DLUHC Priority Outcome):** BNG implementation and delivery aims to contribute towards this priority outcome of DLUHC's by supporting reforms to the planning system through

strengthening net gain text within the National Planning Policy Framework. Furthermore, the implementation of BNG policy will encourage the development of greener homes and communities, through strengthening the use of the mitigation hierarchy in planning decisions and encouraging delivery of biodiversity gains on-site, close to where people live and work. In addition, BNG policy aims to reduce friction around environmental decisions within the planning process by creating more objective and transparent requirements, reducing the incidence of planning delay due to dispute over environmental matters.

4. Evaluation Design

4.1. Evaluation Principles

This section presents a set of key principles that will inform the Evaluation Programme.

4.1.1. Complexity Appropriate Evaluation

BNG is a policy operating within and across multiple individual and interacting systems (including development and building, planning, land, environment, habitats, biodiversity and social). These characteristics of complexity were noted in the BNG Evaluation Framework report (Collingwood Environmental Planning, BSG Ecology, GeoData Institute, CECAN and Vivid Economics, 2021) utilising Defra's Complexity Evaluation Framework (Defra, 2020). Table 1 draws on and updates the Framework report to identify the main characteristics of complexity of BNG.

Table 1: BNG Characteristics of Complexity

Complexity challenge	Relevant BNG characteristics
Multiple interactions and influences which may be non-linear	BNG is an intervention that is closely bound up with several policy areas including both the land use planning system and agricultural policy. This means that change is likely to be influenced by external factors as well as by BNG measures, which may affect the results of BNG policy. BNG seeks to contribute to outcomes in natural systems which are themselves highly complex and demonstrate non-linear change responding to multiple pressures including, for example, climate change and changing patterns of access to nature.
Systems may be in continual change, or may resist change	The current policy context in which BNG operates is one that is evolving, for example in terms of land use management priorities and approaches. This creates dynamism and/or uncertainty in the system. On the other hand, behaviours and practices, such as top-down mechanisms for considering and making decisions, are entrenched in many parts of the system and could result in resistance to change.
Context (and history) matters and openness to outside influences	Establishing a clear boundary around BNG measures/system is difficult. It is not easy to standardise the intervention and hence establish clearly defined treatment and control groups. Outcomes in one setting may be different to those in another which creates a challenge for demonstrating that the

Complexity challenge	Relevant BNG characteristics
	intervention can be replicated in different circumstances (external validation).
Multiple perspectives	There is no 'one correct understanding' of the intervention and its setting. This is reflected, for example, in the ongoing discussion of the extent to which BNG should be encouraging reflection on the wider environmental benefits of nature or should, foremost, focus on biodiversity objectives. Different perspectives of this kind mean that evaluators should not look for 'correct' answers to many questions.

The successful implementation of BNG will require changes in multiple interconnected systems. The evaluation of BNG will need to assess the extent to which the measures to deliver BNG taken by Natural England and others have changed processes across these multiple systems, for example, how well these processes are working and, over time, to understand impact and how far they can be attributed to BNG policy. Further, it will need to trace and assess the contribution of these measures to any variation in the on- or off-site biodiversity outcomes associated with development, over a 30-year period.

As such, complexity-appropriate methods (as set out within the 'Emerging approaches' section of the Magenta Book) (HM Treasury, 2020) and the Complexity Evaluation Framework (Defra, 2020) will be utilised within the evaluation. These methods are part of a hybrid design which includes a range of approaches, including participatory (i.e., participatory systems mapping) and theory-based (i.e., contribution analysis). The design emphasises learning (to understand why changes have happened and not just what has happened) and feedback. It facilitates a systems approach, which encourages understanding the role of context and dealing with change and uncertainty. A key role of the evaluation is to provide actionable information to address challenges and issues as they arise. Key to this will be facilitating processes of reflection (through workshops, interviews and surveys) with internal and external stakeholders and allowing for adaptation in the BNG process and the evaluation.

4.1.2. Developmental Evaluation

A developmental evaluation approach involves the collection and analysis of data that supports informed and regular decision-making about the design, development, and implementation of an intervention (FSG, 2016). This ensures that decisions about strategic adjustments can be made in good time to improve the intervention. It is key to the learning element of BNG, providing actionable information to address issues as they arise, and is closely tied with the process evaluation.

As part of our approach to developmental evaluation, we will keep Natural England informed of any risks and concerns as they are identified throughout the Evaluation Programme, rather than waiting until the publication of our reports. This will help Natural

England identify and mitigate risks to the BNG policy early. It also facilitates the collaborative and flexible approach we are aiming for in the Evaluation Programme. Some of the key changes that have been identified already in the Evaluation Programme have been noted in the Risks and Limitations section of the Evaluation Plan.

Developmental evaluation is grounded in a systems thinking approach that seeks to reflect on the system as a whole. A key principle is therefore understanding an intervention or element in its context and how both it, and its context, evolves. To achieve this, we will have periodic workshops with our four stakeholder groups (two workshops with each group between April 2023 and March 2025) to get a sense of how BNG is working from different perspectives; we will review the ToC and the causal relations between activities and outcomes, to understand where change is non-linear and identify the factors contributing to this (e.g. multiple drivers, feedback loops, etc). For example, the use of off-site and statutory biodiversity credits by developers may evolve with changes in the amount of off-site land provision made available as BNG progresses in time.

4.1.3. Agile Approach

Given the scale and complexity of business change for Natural England in introducing BNG, the BNG Digital Service workstream is being delivered through Agile project design, which centres around incremental (short-term development cycles) and iterative steps to completing projects. This design approach prioritises quick delivery, collaboration and adaptation to change as opposed to following a top-down set plan (Coursera, 2022), adapting to change, and producing working results. The Evaluation Programme has been designed to be complexity sensitive and is based on the principles of the agile approach. This is reflected in design elements such as building in opportunities to modify, add to or remove EQs through specific review points (e.g. mandatory BNG in November 2023, post mandatory BNG in May 2024) and through the incorporation of governance mechanisms for the Evaluation Programme (see Section 8). Such elements allow for potential future policy shifts.

4.1.4. Collaborative Working

As required to deliver a complexity-appropriate evaluation, the evaluation team works closely with Natural England's BNG delivery teams, Working Group, and Steering Group (roles explained in the Section 8) to ensure that the Evaluation Programme is delivered effectively and is fit for purpose. Close collaboration helps to understand how individual elements of the BNG system are working and clarify aspects such as openness of data, data sharing with LPAs, and other key areas and interactions within the BNG system. This facilitates the incorporation of wider issues and unintended consequences of BNG into the Evaluation Programme.

Further, close collaboration has been critical in allowing the Natural England teams to make sense of emerging evaluation findings and more effectively embed learning with the BNG policy design and delivery teams.

4.2. Evaluation Approach and Questions

Our evaluation approach can be split into three evaluation strands:

1) **Process** (the extent to which the policy is being implemented effectively);
2) **Impact** (the extent to which the policy is achieving its stated outcomes); and
3) **Value for Money** (the extent to which the policy is providing a cost-effective means of delivering biodiversity gain).

Evaluation Questions (EQs) have been developed for each of these strands and provide the foundation for the evaluation in this formative stage of BNG implementation (Guijt, et al., 2012)[9]. The EQs will be used to test the elements of the BNG ToC (presented in Section 3) and the links, assumptions, barriers and capabilities within this. In line with the evaluation's developmental approach, the EQs will continue to be reviewed, modified and/or developed as needed. (Defra, 2022).

The sections below present our approach for the process, impact and value for money strands of the evaluation, and the EQs that have been developed within these.

4.2.1. Process Evaluation

Process Approach

The process evaluation seeks to understand the extent to which the BNG policy is being implemented effectively. It will focus on the setup, maturity (e.g., accessibility, availability, comparability, standardisation) and effectiveness of BNG institutional infrastructure and processes (the statutory biodiversity metric, statutory credits scheme and digital services). These will be assessed by answering the process EQs outlined below.

The first step of the process evaluation will be to assess the extent to which the BNG policy and its systems are being established, prior to becoming mandatory. Presenting the results of this initial process evaluation will provide an opportunity for Natural England to reflect on and start addressing any issues related to 'process', feeding into the design of the BNG infrastructure.

To deliver the initial process evaluation, key steps are anticipated to be as follows:

[9] "Formally, the purpose of formative evaluation is to get ready for summative evaluation. A project needs time in the beginning to work out implementation difficulties, how an idea works in practice. The time to stabilise, forming and improving a model is the focus of formative evaluation. Once 'the model' is ready, only then should it be subjected to summative evaluation."

- Finalisation of the evaluation framework. The evaluation questions, indicators, data needs and sources will be reviewed and refined in order to guide the process evaluation.
- Secondary evidence review. Secondary data sources, identified within the evaluation framework, will be reviewed and analysed. This review will be dependent on the accessibility and format of the secondary evidence sources and will therefore require collaboration with the BNG M&E team.
- Primary research with stakeholders. Semi-structured interviews will be delivered to gather insights on the setup of BNG prior to it going live. Interviewees will be purposively selected and represent seven stakeholders: LPAs; developers; environmental consultants; landowners/BNG providers; advisory bodies; Natural England; and Defra.

The process evaluation will be formative and summative, assessing the way in which the elements of the BNG system were set up as well as continuing to identify learning from implementation, recognising that this is likely to continue to evolve during the early years of implementation, i.e., for at least the first two years.

Process Evaluation Questions

1.1 To what extent have the Environment Act 2021 requirements for biodiversity gain in planning been met?

1.2 To what extent does mandatory BNG provide a standardised approach through which development delivers biodiversity net gain with consistency and transparency?

1.3 To what extent have the methods for setting up BNG tools and systems (biodiversity metric; digital service; credits system; operator system) worked well or not so well, and for whom? What are the lessons learned?

1.4 To what extent are BNG tools and systems (biodiversity metric; digital service; credits system; operator system) supporting effective BNG implementation?

1.5 To what extent are stakeholder (external to Defra/Natural England) initiatives and tools facilitating and supporting effective BNG implementation?

1.6 To what extent do stakeholders have adequate capability, capacity and resource to implement BNG effectively? And where has it come from?

1.7 To what extent is mandatory BNG securing commitments to provide a net gain in biodiversity in ways that support local nature recovery priorities?

1.8 To what extent has the development and implementation of BNG been influenced by external factors?

4.2.2. Impact Evaluation

Impact Approach

The impact evaluation will seek to establish the extent to which BNG is achieving its stated objectives and outcomes. It focuses on the three main outcomes of BNG: minimisation of the impacts of development on biodiversity and the delivery of more and better-quality nature that is managed and maintained over the long-term; a streamlined BNG process that provides certainty and clarity with proportionate process and cost burdens: and benefits from improved proximity and access to nature for people who live and work in and around sites where development takes place.

The impact evaluation will take a theory-based approach, looking at whether the BNG actions have resulted in the intended changes as shown in the ToC (Section 3) (barriers overcome, capacities achieved, objectives and outcomes attained). It will establish what change has been produced (where relevant, in comparison with the baseline situation before the start of mandatory BNG – see Section 5), including any consequential benefits or disbenefits. It will explore how any change happened and what drivers or pressures contributed to or blocked it. Finally, it will seek to establish how far the changes can be attributed to the BNG intervention.

BNG has characteristics that make a complexity appropriate approach suitable for its evaluation (see Section 4.1.1). The main mechanisms and processes used for managing complexity within the impact evaluation are:

- Recognition of the multiple stakeholders in BNG and use of methods to capture their different experience and perspectives as part of the data collection: in developing interview and focus group schedules, for example, we will tailor schedules to different stakeholder groups (government departments and arms-length bodies, LPAs, developers, landowners and land managers, local communities);
- Testing of the theory of change against the impact evidence at each stage of the evaluation; and
- Creation of opportunities to review the theory of change at key points, linked to the contribution analysis (Section 4.3.1).

When BNG comes into force in November 2023 it will be mandatory as part of most kinds of development. There is therefore no scope for comparing similar development sites where BNG has or has not been required, to provide a counterfactual. Additionally, many of the changes that BNG is intended to produce (including both improvements in biodiversity and benefits to people of proximity and access to nature) will take time to materialise. The impact evaluation will focus on the linkages (causal chains) between the actions and their effects as set out in the ToC by:

- Testing the credibility of the ToC through the baseline evidence and input from stakeholder perspectives gathered from separate workshops with LPAs, developers, landowners and local communities and NGOs;

- Gathering evidence on the actions undertaken and the extent to which barriers have been overcome and capacities achieved as intended; and
- Developing a plausible case to explain how the intervention actions contributed to the changes observed. We would expect that the actions undertaken would have a direct influence: this is not a field where government intervention is likely to have direct control as there are multiple drivers for changes in land use and habitats, including agricultural policy, market forces and pressures on local planning systems. On the other hand, the legal requirement for at least 10% BNG as a condition of development permitting means that the intervention should have more than an indirect influence.

We will use contribution analysis to establish whether, how and to what extent the intervention contributed to produce the changes observed (see Section 4.3.1). Attributing impact (both environmental and social) directly to BG requirements will be difficult. Therefore, care will be taken to explore what would have happened without BNG. We will use qualitative research methods (interviews and surveys) and workshops with different stakeholder groups to explore counterfactual scenarios. We will provide evidence about delivery against the three main BNG objectives (nature, planning, people) and ask participants what would have happened in the absence of BNG. This will not provide a counterfactual scenario but will be a mechanism for assessing the extent of change, with greater levels of confidence where the responses from different stakeholder sectors are consistent.

Data from the BNG Register will provide evidence of the provision of BNG off-site and should be possible to disaggregate by extent, type, quality and distinctiveness of habitat lost and gained, type of development and location of the BNG provided. It will also provide evidence about how consistently the statutory biodiversity metric is being applied. This kind of data will not be available for onsite habitat provision and the evaluation will have to draw on a sample of BNG plans to look in more detail at examples of onsite habitat provision. Further evidence will be obtained from independent sources including peer-reviewed publications and academic research programmes. Interviews or surveys of LPAs, developers and those providing sites for habitat creation or enhancement (including landowners, land managers, habitat banks and NGOs) will be used to provide qualitative data about stakeholder (LPA, developer, landowner, community) perceptions of outcomes for local habitats with and without mandatory BNG and the extent to which decisions about the type or location of habitats created or enhanced aligns with LNRS priorities.

To assess the impacts of mandatory BNG on the planning process, for example in terms of the length of time taken for determination and issuing of permissions or number of refusals of permission on biodiversity net gain grounds, data will be collected from national statistics such as DLUHC data on development permissions, a sample of BNG plans and interviews with LPAs and developers. Given that BNG is only one of many factors that could influence the approval of planning permission and the time this takes, and in the absence of a counterfactual, interviews and surveys will provide critical data on the counterfactual scenario from different stakeholder perspectives.

Assessing the impacts of BNG on people will focus largely on loss or gain of access to nature and the benefits provided by proximity to nature. It is unclear whether evidence will be available in BNG plans or Habitat Monitoring and Management Plans (HMMPs) about access to the sites where BNG is being created or enhanced: a sample of these plans from across England will be reviewed to identify data about access: these will include sites of different sizes, with different types of habitat. Given the likely limitations of the information on access available in these plans, methods such as interviews, focus groups and surveys will be used to provide qualitative evidence about changes in access to nature. Where there is a need to explore aspects such as inequalities in access based on geographical area, types of habitat, socio-economic characteristics of the local population or other factors, a deep dive study (Section 4.3.2) will be considered.

The impact evaluation will begin to collect data relevant to the wider social impacts of greater proximity to nature such as outcomes for physical or mental health or educational outcomes. It will be very difficult to attribute changes in outcomes to BNG provision at this stage. More valuable data is likely to be obtained through surveys of local communities and LPAs, or where appropriate through 'deep dive' studies (Section 4.3.2).

Impact Evaluation Questions

The impact EQs have been organised under three 'outcome areas'; nature, planning and people:

Nature:

2.1 To what extent is BNG delivery reducing the negative impacts of development on biodiversity?

2.2 To what extent is BNG delivery resulting in more and better-quality nature that is managed and maintained over the long-term?

2.3 To what extent are local environmental priorities supported by BNG delivery?

2.4 To what extent are national government environmental priorities supported by BNG delivery?

2.5 What consequential benefits[10] and disbenefits[11] for biodiversity and nature have resulted from BNG delivery?

[10] Consequential Benefit: Defined in the context of the EQs as a benefit identified by a change initiative which we might logically expect to accrue as a direct result of the change, but which has been deemed out of scope for the initiative i.e., an outcome not described in the ToC.

[11] Disbenefit: Defined in the context of the EQs as a consequence of change perceived as negative by one or more stakeholders.

Planning:

3.1 To what extent does the BNG process provide increased certainty and clarity for stakeholders?

3.2 To what extent are different stakeholders benefitting from the mandatory BNG process?

3.3 To what extent are stakeholders following all guidance and considering biodiversity earlier within the planning process than they would have done pre-mandatory BNG?

3.4 What consequential benefits or disbenefits for stakeholders in the planning system have resulted from BNG delivery?

People:

4.1 To what extent are people who live and work in and around the sites where development takes place benefitting from improved proximity and access to nature?

4.2 What consequential benefits and disbenefits for local people have resulted from BNG delivery?

4.3 To what extent are the benefits[12] and costs of BNG implementation distributed equitably between different socioeconomic groups?

4.2.3. Value for Money Evaluation

Value for Money Approach

The value-for-money (VfM) evaluation will seek to establish whether the implementation of BNG is providing biodiversity gains in a cost-effective way. For this, we will need to compare the costs and benefits under BNG implementation with the costs and benefits in the absence of BNG implementation, i.e., the counterfactual scenario. However, given that there is no control group by design where BNG will not be implemented, and we do not have the data to create a counterfactual scenario using quasi-experimental matching methods, we will need to assess the likely costs and benefits under a 'hypothetical' counterfactual scenario.

In the hypothetical counterfactual scenario, no BNG policy is implemented. This is an inferior approach to constructing a counterfactual that reflects what would have happened in the absence of the BNG policy, but it is a more feasible approach given the data

[12] Benefit: Defined in the context of the EQs as the positive and measurable improvement resulting from an outcome perceived as an advantage by one or more stakeholders, which contributes to one or more organisational objectives (a business outcome that delivers value to the organisation).

limitations. The financial costs associated with this hypothetical counterfactual scenario are, therefore, zero, since no policy setup is involved. Estimating the benefits associated with the hypothetical counterfactual scenario is more challenging because there would be dis-benefits, particularly environmental, arising from proceeding with development in the absence of BNG policy. The likely benefits in the hypothetical counterfactual scenario will be estimated using data collected through interviews and focus groups with relevant stakeholders, including landowners, NGOs, land banks, local authorities, developers, local communities.

Estimating the costs of BNG implementation requires consideration of both direct and indirect costs. Direct costs are those associated with implementing and running the BNG policy and its systems. These include setup costs (e.g., IT system), personnel costs and ongoing operational and maintenance costs, occurring to both national government and LPAs. Data relating to these direct costs will be collected from the programme budget, the full business case, reporting by Defra, and focus groups with Defra, Natural England and LPAs. Indirect costs are those incurred by other stakeholders, in particular developers and sellers of off-site biodiversity units. For developers, these would include the resources used to achieve approval of the biodiversity gain plan and the cost of purchasing biodiversity units or delivering on-site works. These costs will be estimated using data obtained from interviews or focus groups with a sample of developers. For sellers of off-site biodiversity units, these would include the cost of providing and maintaining sites. The cost to landowners of providing sites would be the opportunity cost, i.e., the value that could be achieved by using their land for an alternative purpose, e.g., agriculture. There would also be costs associated with maintaining the site. These costs will be estimated using data from interviews or focus groups with landowners (including local authorities), ecologists, land banks and NGOs.

Although there will be some monetary benefits associated with BNG, e.g., those accruing to sellers of biodiversity units, estimating the total benefits will require environmental and social benefits of BNG implementation to be monetised. Monetary benefits to sellers of biodiversity units can be estimated using data on the market price of the biodiversity units sold. We will seek to gather data on the market price of biodiversity units. However, it should be noted that this information might not be publicly available, and sellers may not wish to divulge the price at which biodiversity units are sold, since it is commercially sensitive information. Given that the most directly comparable estimated costs and benefits will be those accruing to sellers, i.e., the financial costs of procuring and maintaining gain sites and the financial benefits from selling biodiversity units, a partial assessment of cost-effectiveness can be made by comparing the estimated costs and benefits for sellers.

Many of the wider environmental and social benefits will be difficult to quantify and monetise. A suggested proxy approach to quantify wider environmental benefits would be to quantify the carbon sequestration benefits of BNG implementation. This can be estimated using data on the area and type of individual habitat, hedgerow, or river units from biodiversity gain plans and the register, along with the UK government’s non-traded carbon values.

Wider social benefits could be, for example, the monetised health benefits arising from BNG for local populations. However, it will be very difficult to quantify the change in health outcomes caused by BNG and thus to monetise the health benefits attributable to BNG. This estimation will likely rely on qualitative assessment of changes in health outcomes for local populations close to sites delivering biodiversity gain, attributable to changes in the amount of gain relative to existing habitat/open space, obtained through surveys of local communities and LPAs, or potentially through 'deep dive' studies (discussed in Section 4.3.2). It may be possible to quantify some other social benefits, including access to nature, mental health outcomes and social cohesion, using values from existing literature. However, other environmental benefits will likely not be quantifiable, e.g., the impact on species diversity, and will need to be assessed qualitatively. Where possible, a high-level magnitude will be assigned to such benefits to allow for the determination of whether or not benefits exceed costs. These benefits will be explored through interviews with LPAs, local communities and developers. Ultimately, the benefits that are quantifiable will depend on the data that can be gathered, particularly from stakeholders, during the data collection stage of the evaluation. The approach to quantifying benefits will, therefore, be amended as required, in line with the developmental evaluation approach outlined in Section 4.1.2.

The VfM evaluation will also seek to assess the geographical spread of the costs and benefits, to understand whether these are incurred disproportionately in different areas. Evaluating the extent to which developers are achieving BNG through off-site delivery, on-site delivery or via the statutory biodiversity credits system can provide an indication of geographical displacement of biodiversity. Data for this will be obtained as part of the impact evaluation, from information recorded on the BNG register and the credits system. It will be sought to quantify the distribution of the community benefits of BNG by relative deprivation levels. Data to estimate this will be obtained by studying a sample of LPA areas. The area and number of biodiversity units to be delivered through BNG per Lower Layer Super Output Area will be calculated and compared with Office for National Statistics (ONS) population data and Index of Multiple Deprivation (IMD) data. Changes in distribution will also be assessed where possible.

Other distributional impacts could be assessed qualitatively. For example, the extent to which BNG implementation differentially changes access to green space for different socioeconomic groups. Evidence would need to be provided through focus groups with stakeholders and/or 'deep dives', focussing on impacts in a particular locality.

Value for Money Evaluation Questions

5.1 What has been the cost of implementing BNG to the relevant stakeholders?

5.2 What is the value of the primary benefits generated by BNG implementation?

5.3 What is the value of the consequential benefits and disbenefits generated by BNG implementation?

5.4 To what extent do the benefits of BNG implementation outweigh the costs?

4.3. Evaluation Methods

This section describes the methods which will be utilised to complete primary data collection for the evaluation. Data will be collected in 'waves', with the first wave (Baseline) planned for May-July 2023. The timelines of the Evaluation Programme are presented in Section 6.

Table 4 in the appendices presents how these methods will be used for each evaluation question.

4.3.1. Contribution Analysis

A key requisite of this evaluation is the attribution of causality, drawing out the factors that are contributing to the outcomes, specifically the biodiversity outcomes. Contribution analysis is a process of exploring the ToC behind the intervention and, at the same time, taking into consideration other influencing factors. Questions asked through Contribution Analysis are:

- Do the factors shown as contributing to change in the ToC and any explicit assumptions, adequately explain the change observed?
- If the factors shown do not adequately explain the causal relationships, what other factors or processes (e.g., non-linear change, tipping points etc) offer more plausible accounts of causality?
- Should any new assumptions about causal relationships with the BNG system be made explicit for testing in subsequent stages of the evaluation?
- What unintended outcomes have been observed?
- To what extent is it possible to make credible statements about what might have happened in the absence of BNG as a means of assessing the level and nature of the change produced by BNG implementation over the period covered by the evaluation?

The value of contribution analysis is in providing a clear structure and approach to understanding attribution. Attribution is explored through assessing the contribution an intervention is making to observed results. A policy-level ToC has been developed by Natural England (see Section 3) and provides the initial understanding of how the BNG policy is expected to produce the intended outcomes for nature, planning and people. The contribution analysis will focus on how far any observed changes in the intended outcomes of BNG can be attributed to the introduction of mandatory BNG policy and the activities identified on the ToC. This will involve a review of the ToC and analysis at each stage of the Evaluation Programme.

The following steps describe how the contribution analysis will be performed.

Step 1: Gather existing evidence on the Theory of Change.

Evidence around existing challenges and opportunities for implementing BNG was collected through the stakeholder workshops and the review of evidence as part of the evaluation framework development process. Additional stakeholder workshops were carried out in November 2022 – January 2023. The next round of stakeholder workshops is scheduled to be held in summer 2023, prior to BNG becoming mandatory in England. Each wave of evidence collection for the evaluation reports (Baseline, Interim and Final) will generate evidence for the contribution analysis.

Step 2: Assemble and assess the contribution story, and challenges to it.

This stage involves assembling the evidence to demonstrate why it is or is not reasonable to assume that the actions of the BNG intervention have contributed to the observed outcomes. In practice this will be a process of examining the links between activities, outcomes and assumptions to see if the data provides evidence for or against those links and assumptions. This will be done with reference to the baseline data (see Section 5). Once the contribution story has been compiled it will be assessed for credibility, for example by asking: Do different stakeholders agree with the story? Where are the main weaknesses in the story? What evidence is needed to address those weaknesses?

Step 3: Seek out additional evidence.

As the evaluation progresses more evidence may be needed to establish the links and assumptions for specific parts of the system. The evaluation team will assess what areas need more detailed evaluation and, where necessary, make a case for collecting more data around that issue.

Interviews (Section 4.4.1), Surveys (Section 4.4.2) and Focus Groups (4.4.3) all have the potential to be used for data collection in the evaluation programme and if further data is needed around an issue, the team will consider adding questions or topics for discussion to aid data collection. Further, ‘deep dive’ studies (Section 4.3.2) are available as a flexible and reactive method of exploring factors, casual relationships, and unintended benefits/disbenefits within the ToC. Deep dives could therefore also be used to seek out additional evidence in order to increase confidence in results.

Step 4: Revise and strengthen the contribution story.

This involves revisiting the ToC to decide whether the results of the analysis should be reflected in changes which would make the ToC more robust and credible. This review will happen after each stage of the evaluation.

4.3.2. Deep Dives

Purpose

A key part of the Evaluation Programme will be the inclusion of mini studies that examine different aspects of the BNG system grounded in place, which have been termed ‘**Deep Dives**’. The purpose of the deep dives will be to strengthen the ToC and our understanding of BNG by:

- providing an in-depth explanation of how and why change may be happening on the ground;
- examining specific factors or causal relationships within the ToC; and
- exploring unintended benefits/disbenefits and possible missing ToC elements.

It is important that the deep dive programme is purposeful, so each deep dive will be focused on answering a research question and will have a specific hypothesis that it will be testing. The focus and topics of the deep dives will be established throughout the course of the Evaluation Programme and be informed through the data collection conducted to answer the EQs. Research questions may therefore help to answer existing EQs but could instead focus on unintended benefits or disbenefits identified. It is expected that the deep dive findings could inform ToC revision and future data collection methods. Deep dives could also be used to explore initial process and/or implementation issues emerging before mandatory BNG goes live to help identify changes that can be made to improve BNG delivery.

Principles

There are a number of core principles that will be applied to the deep dives.

Firstly, the deep dives will be **targeted and based on evidence**. This will ensure that findings from the initial data collection for the Evaluation Programme will identify potential topics to be explored in more detail. Examples of topics include:

- An issue/barrier identified through stakeholder engagement;
- Unintended consequences identified through the evaluation;
- A specific element or relationship in the ToC, to assess whether change is being realised as intended;
- Discrepancies across the BNG system i.e., where something (e.g., procedure/process) is working well in one case but not in another.

This means that the unit of analysis for each deep dive could be different. A deep dive's focus could be a specific development and its associated biodiversity gain site(s), a specific stakeholder organisation or company (e.g., LPA or developer)[13], a system (e.g., BNG register) or another BNG element to be studied.

Secondly, the deep dives will focus on gaining an **in-depth view** on a topic area. Care will be needed that the research question under study is kept focussed so that within the resources an in-depth examination of the issue can be carried out.

Thirdly, the deep dives will **draw on a range of methods**. Qualitative and quantitative data collection methods can be employed to attain a 360-degree picture of how and why

[13] Organisation-specific deep dives will not be used as an enforcement mechanism.

BNG outcomes are, or are not, being realised on the ground. Depending on the research question to be answered, deep dives may utilise a mix of data collection methods with data collected from more than one stakeholder group. Examples of data collection methods used could include:

- Surveying different stakeholder groups;
- Interviews with key stakeholders;
- Collating data from the statutory biodiversity metric;
- Extracting geospatial data for different biodiversity gain sites; or
- Collecting available background information on organisations, sites, BNG processes etc.

Finally, as it is common for new policies to face challenges in the early stages of enactment, the deep dives will seek to cover **both positive and negative** aspects of BNG implementation. This is so that good practice can be drawn out as well as learning lessons from aspects that might not be working as well as expected.

Approach

Step 1 – Identification: Potential topics to be explored as deep dives will start to be identified as part of the initial data collection being completed for the baseline (Section 5) and will continue to be highlighted as they emerge from subsequent waves of data collection. This will form a 'long list' of potential deep dive topics. See Section 6 for a breakdown of the Evaluation Programme timeline and waves of data collection. Deep dive topics may also be identified through other ad hoc routes, for example they may be suggested by the Steering Group, Natural England or other stakeholders.

Through contact with stakeholders and project partners, we have already started collecting information on a series of development sites where BNG is being implemented which can be drawn upon to investigate further as part of the deep dive programme, with scope to bring in additional sites as needed depending on the findings emerging from the evaluation. By the end of this Evaluation Programme, we hope to have established a pool of sites that could be utilised at a later stage of BNG evaluation.

Step 2 – Appraisal: We will select possible deep dive topics considering their suitability for further investigation using criteria such as the strength of evidence supporting the topic (through initial data collection) and its potential impact on BNG implementation. Potential deep dive topics will be presented to the Steering Group for approval, alongside topics key information will be consolidated to inform the Steering Group's decision, including:

- The topic chosen and supporting information;
- The research question and hypothesis to be tested;
- The 'size' of the deep dive, based on the scale of research and resource required; and
- Proposed methods for data collection.

The Steering Group will also be presented with the long list of topics that had not been put forward for appraisal, to understand why other topics might have been discounted, and provide feedback and critique on the selection process.

Once the topics have been presented, the Steering Group will be responsible for choosing the topics deemed most suitable to be taken forward as deep dives.

Step 3 – Design: Once a topic has been approved, the deep dive will be designed in more detail. The research question and hypothesis to be tested will be finalised, dependant on any feedback from the Steering Group and any other relevant data collected during the project. Developing an appropriate hypothesis should help answer whether, how, and why a change has occurred due to BNG implementation. The deep dive research question and hypothesis will inform which data will need to be collected, the data collection methods needed, and the depth to which they will be applied.

Step 4 – Data collection: Data collection will be carried out in accordance with the approach set out in step 3 and deep dive principles. If required, background information on organisations, sites, and BNG processes will be gathered by Eunomia to provide context to the deep dive. Other methods, primarily interviews and surveys, will be conducted with key stakeholders associated with the deep dive topic to collate different perspectives on the same component of BNG. An example of data collection approaches that could be used for a deep dive case is shown in Figure 3.

Step 5 – Analysis and reporting: Quantitative and qualitative data collected as part of each deep dive will be analysed and consolidated to form a deep dive write up. The deep dive write ups will be presented in the appropriate evaluation reports produced by Eunomia and will include the context of the deep dive (e.g., why chosen), how data was collected, the initial inferences taken, and a triangulation of these results in relation to other findings detected from the evaluation. While the number of deep dive studies to be carried out during the evaluation depend on the findings from other forms of data collection, it is expected that at least two deep dives will be completed for each evaluation report produced, and effort will be made to ensure they are concise and act as supplementary material to the main evaluation.

Figure 3: A theoretical example of how a deep dive study may be implemented as part of the BNG evaluation programme.

Deep Dive Example - Community access to nature*

Background – During workshops held with each stakeholder group (LPAs, Developers, Landowners, and Environmental/Community NGOs), a key concern raised by all stakeholder groups was that the delivery of on-site BNG sites was not contributing to local access to nature benefits. Some groups were concerned that public access to BNG sites had not been granted as set out in planning applications, while others described anecdotal evidence indicating that a small number of people were using the site. From this information a hypothesis (e.g., 'BNG fails to enable x group to access nature in *y* scenario because of *z* reason') could be proposed that the evaluation team would like to test in more detail.

Site identification - For this scenario, a sample of 2 or more development/BNG sites at which to test the hypothesis could be chosen from an existing pool of sites. Selection criteria for sites would be based on certain parameters e.g., 1) that they have provided BNG through on-site provision: and 2) that they are situated in urban or semi-urban location as these sites might be most likely to have greatest benefit in facilitating access to nature for the largest number of people. Other sampling criteria could include:

- Size: to ensure that data is collected at both 'large' BNG and 'small' BNG sites (with size definitions to be determined during the deep dive design phase); and
- Deprivation: to consider the relative deprivation of the area in which the development site is situated.

Data collection – A mixed-methods approach would be employed in this situation and include:

- Interviews with developers, local stakeholders, and community NGOs: Interviews could gather different stakeholder views on whether developed BNG sites are being used to the extent anticipated, and reasons for observed behaviour.

- Surveys within the local community: surveys could uncover how many people are using the site(s) and how often and have people been accessing greenspace more often than before the site was created/enhanced due to BNG.

- Quantitative Data Analysis: to include analysis of geospatial/other quantitative data on the sites in question. For example, to look at their location, size, and accessibility.

* *Note that this is not a case that we predict will be explored further as part of the actual deep dive programme.*

4.3.3. Participatory Systems Mapping

Participatory Systems Mapping (PSM) is a participatory methodology in which a group of stakeholders collaboratively develop a system map based on a focal problem, the focal factors which are central to the focal problem, and the connections (which represent causal relationships) between them. The map is intended to represent what stakeholders believe to be the causal structure of their system.

PSM is a means of mapping the overall system in which BNG operates and provides an understanding of the full breadth of drivers that influence the policy. While the ToC maps the BNG intervention and the causal links between its components (activities, outcomes, assumptions etc), PSM maps the systems and sub-systems in which BNG operates. PSM can be used to see if there are parts of the system that are exerting influence but have not been identified within the ToC. Including PSM as part of the evaluation brings the wider system into view and ensures the ToC continues to be iterated and contextualised, reflecting a systems approach.

The final output will be a network of factors and links that expresses the stakeholders' view of the overall social, economic, ecological and technical system in which BNG is located.

This output will be used throughout the Evaluation Programme in order to visualise and present to a range of stakeholders the relationships between BNG and factors external to the system and to critique whether the influence of external drivers and any changes in these, are being taken into account in analysing the factors contributing to BNG outcomes.

4.3.4. Data Review

Data review is an evaluation method that involves examination of existing data sources to meet the evaluation objectives. For this evaluation, data review will include collating quantitative data from key BNG delivery systems, such as the BNG digital systems, Local Authority systems and others (such as Land Charges), and reviewing this data to identify patterns, trends, and insights relating to the evaluation questions. The data review will therefore depend on access to the relevant systems and the ability to extract data from them to allow analysis.

The data review will help to answer the EQs and build an understanding of the scale and nature of BNG implementation. It will be used to identify issues in the data and determine the need for the development and/or application of more sophisticated analysis and tools to fill data gaps and understand data trends.

There are several known limitations to the current recording systems (the current systems consisting of both the Natural England delivery systems (BNG Register, Statutory Credits Sales Platform and Operator system) and Local Authority systems). These will currently limit the ability to construct a complete national picture of pre-mandatory or post-mandatory BNG delivery which will impact the completeness of the data review. The data review must therefore be applied in conjunction with the other evaluation methods outlined

in Section 4.3. Similarly, the data review alone will not answer more complex evaluation questions and will need combining with other analyses.

The evaluation team will set up systems for regularly collecting the secondary data required, either directly from source (e.g., Natural England will provide monitoring data from their digital systems) or from publicly available sources (e.g., planning application data is available from local authorities' planning portals).

4.3.5. Cost Benefit Analysis

Social (public) cost benefit analysis is a methodology for comparing the full social (public) costs with the full social (public) benefits of a policy. This methodology will be used to undertake the VfM assessment of the BNG policy. See Section 4.2.3 for the VfM Evaluation.

Firstly, the costs and benefits associated with the policy are identified. These will include environmental and social costs and benefits, as well financial ones. Monetary values are assigned to all costs and benefits, so that they can be compared using a common metric. Next, the time frame over which costs and benefits will occur is determined. The UK Government's Green Book guiding appraisal and evaluation of public sector policy (HM Treasury , 2022) recommends that social (public) cost-benefit analysis should consider the long-term impacts of a policy and so the timeframe used in the VfM evaluation of the BNG policy will be 30 years. All future costs and benefits are then discounted to present values, using the social rate of time preference, to reflect the time value of money. Following the UK Government's Green Book, the social rate of time preference will be set at 3.5% per year. The net present value (NPV) of the policy is calculated by subtracting the discounted costs from the discounted benefits. A positive NPV indicates that the benefits of the policy exceed the costs, i.e., the policy provides positive VfM.

Cost-benefit analysis can also include a distributional analysis to assess how the costs and benefits of the policy are shared across different groups in society. This analysis involves identifying the different groups that will be affected by the policy and determining how the identified costs and benefits of the policy will be distributed across these groups. Often, it is difficult to provide quantitative estimates of the costs and benefits accruing to each group and so the distributional impacts of the policy are discussed qualitatively. The VfM evaluation will seek to assess the geographical spread of costs and benefits of the BNG policy, as well as the distribution of the community benefits of the BNG policy by relative deprivation levels.

Note: although Cost Benefit Analysis is conceptually a quantitative tool, in practice it is likely that the analysis will need to include aspects of qualitative analysis, due to the limitations of the real-world application.

4.3.6. Document Review

A document review is the method that will be used to collect and structure evidence from secondary sources. Activities include scanning the literature (e.g., reports from Defra, Natural England, LGA Planning Advisory Service, professional bodies reports and relevant academic papers), analysing secondary data and creating a reference list so that all documents and data sets are organised and easily accessible to team members. Whilst some data and research exists for baseline review, it is anticipated that this resource will increase substantially over time.

Once the information for an EQ has been collected, it will be combined and compared, to remove any duplications and identify aspects of interest, which could include:

- Similar results across different data sources, giving greater confidence in findings;
- Contradictory results which need to be analysed to understand the reasons for differences;
- Emerging trends; or
- New issues or questions arising.

This information will be put together in an accessible format. This initial sifting and organisation of the information plays an important role in answering the evaluation question as it provides a foundation for the analysis.

4.3.7. Thematic Analysis

Thematic analysis will be used to analyse collected qualitative data. Thematic analysis enables both explanatory and comparative (across stakeholder groups) analysis through the identification of main patterns and themes that summarise all views collected.

To undertake the analysis, firstly raw, anonymised, transcribed data will either be inputted into an excel matrix (organised by research question/stakeholder) or software such as NVivo or Dedoose. Secondly, the data will be coded according to identified key themes. These themes will typically align with the research and sub-evaluation questions. These themes will subsequently be consolidated and condensed as necessary before being used as a basis for writing-up the findings.

4.3.8. Other Possible Analyses

Statistical Analysis

Basic descriptive statistics can be used to explore the main characteristics of data, including frequencies, percentages, ratios and measures of central tendency. Cross-tabulation tables are likely to be appropriate to compare groups or time periods and be effective ways of presenting some of these analyses. Inferential statistics will also likely be used, to derive statistical tests of significance.

More advanced statistical data analysis may be appropriate to certain evaluation questions, but will be dependent on the evaluation questions, comparator groups and the availability of data. The requirement for more advanced statistical analysis will continue to be assessed throughout the Evaluation Programme.

Geospatial Analysis

For this first stage of the BNG Evaluation Programme, geospatial analysis will be limited, partly due to the availability of geospatial records of habitats. However, more generalised geographic information for BNG delivery will be available for off-site locations from the Register that would enable geospatial analysis (e.g., distances of off-site gain from the development site). As part of the Evaluation Programme we will continue to review the feasibility and value of including additional geospatial data and analysis at future stages.

Data Cleaning, Processing and Error Checking

A series of analyses will be employed for error checking and the identification of missing values in data sets. It is unlikely that double data entry would be employed for error checking (due to the substantial time required for this activity) but other techniques, including geospatial processing will be considered to highlight anomalies. Furthermore, analysis will be employed to generate change statistics (in habitat extents, validation checking and quality assurance of the monitoring records, change between periods).

4.4. Data Collection

4.4.1. Interviews

Interviews with key stakeholders will be a primary collection tool to inform the process, impact and value for money evaluations. Topic guides, which present a list of topics to be explored with interviewees, will be developed based on relevant EQs and sub-questions set out within the evaluation framework.

Seven stakeholder groups have been identified as covering a range of key perspectives and insights on BNG progress. The stakeholder groups are as follows:

- LPAs;
- Developers/environmental consultants working for developers;
- Landowners/BNG providers, including Habitat Banks;
- Environmental NGOs;
- Community Groups;
- Natural England; and
- Defra.

The intention is that stakeholders representing these groups will be selected via purposive sampling and interviewed using the topic guides as a basis for semi-structured interviews.

Findings from the interviews will be anonymised, coded, and analysed thematically according to the relevant EQ (see section 4.3.7).

4.4.2. Surveys

Surveys will be a primary data collection tool used for the collection of high-level data from stakeholders, including LPAs, developers and landowners. Surveys will be used to provide data covering a larger number of respondents than could be covered by interviews.

Survey questions will be developed using the relevant EQs selected from those presented in Section 4.2. This will allow subsequent ease of analysis and data comparison with other data collection tools.

Where possible, survey questions will be closed, using multiple choice and Likert scale options. Closed questions will be quicker for participants to answer and will help to ensure that the data gathered is measurable, comparable, and possible to analyse using quantitative analysis whilst reflecting the likely range of responses. Where qualitative responses are required, a free text option will be provided; the responses will be analysed using thematic analysis.

We will carry out stakeholder interviews before developing surveys, to explore and identify the range of issues and stakeholder actions, responses and perceptions. This evidence will be used to draft the response options for the survey, ensuring that the data obtained provides relevant evidence to support understanding of the scale of the issues identified and differences in actions, responses and perceptions.

Both the interviews and the surveys will aim to minimise the demand placed on stakeholder groups for data collection. It is anticipated that the interviews will last no more than 45 minutes and the surveys will take approximately 10-15 minutes to complete. We will ensure that an overlap in approached stakeholders for both collection tools is avoided where possible by careful checking of lists of interviewees and by clarifying the intended audience in the introduction to each survey tool.

After data collection, depending on the exact sampling criteria, the data may need to be re-weighted by sampling proportions to ensure it is representative of the populations being studied. The data will be analysed in Microsoft Excel or R. We will provide descriptive statistics and tabulate and cross-tabulate the data where appropriate; using this to identify key findings related to the evaluation questions, and differences between stakeholder groups and demographics if the data allows such comparisons to be made.

4.4.3. Focus Groups

Focus groups enable the gathering of deep and rich qualitative data through facilitated participant discussion and observation of group dynamics. Focus groups are likely to reveal diverse understandings of a topic which are often difficult to access from other methods of qualitative data collection. These collected views can be useful as an

exploratory phase of data collection to inform the design of other qualitative research methods.

Focus groups function best when there are between 5-10 participants. Questions will be open-ended and developed using the relevant EQs and sub-questions. A variety of online tools will be used to allow active participation by attendees. Tools may include:

- online sticky notes – for example, to capture attendees' views;
- whiteboards – capturing notes and sharing preliminary comments; and
- break out groups – depending on the number of people attending, consideration could be given to breaking up into smaller groups to discuss different questions.

To maintain energy levels and focus, it is recommended that any online session is no longer than 90-120 minutes. This necessitates a good design and close management. Where possible, focus groups will be scheduled in the morning to maximise participant attention and energy; participants may tend to lose more focus in the afternoon following hours beforehand of work.

We will use thematic analysis (Section 4.3.7) to identify the main themes emerging from the group discussions. The data will be structured under key headings which will include pre-defined themes aligned with the EQs and themes emerging from the discussion.

4.4.4. Workshops

Workshops are used to gather stakeholder groups or people with interests, expertise or professions in a relevant topic and involve them in structured discussions to answer key research questions. Workshops will be used when the topic to be discussed is complex and requires a staged process to enable the members of the group to develop their thinking together or look more deeply into several linked issues. Whilst workshops and focus groups are very similar, the number of participants in workshops is typically larger than focus groups.

Workshops will generally be held online to facilitate the participation of people who are not geographically close together. In some cases – for example if the subject to be discussed arouses strong feelings or sensitivities, it may be advisable to hold the workshop as an in-person event. Whether the workshop is virtual or in person, it will be carefully designed to take account of the characteristics of the participants, their levels of information and areas of interest and to provide enough breaks.

The workshop sessions will be recorded either by a note-taker(s) or as an audio-recording which will then be transcribed. We will use thematic analysis (Section 4.3.7) to draw out the main evidence and themes raised, to structure new evidence that has emerged and to understand responses to any approaches or options discussed.

This method provides space for discussion which helps to encourage innovative thinking and facilitate problem-solving. We do not anticipate using workshops frequently as a research method.

The stakeholder engagement workshops are not being carried out primarily for the purposes of data collection but to facilitate stakeholder engagement within the evaluation and review of its results.

4.4.5. Sampling Strategy

Although it would be beneficial to have census level data to answer the EQs, at present there are only a few systems that will be storing census level data (namely the Natural England BNG Register, Statutory Biodiversity Credits Sales Platform and Operator system). Further, there is remaining uncertainty about the data that will be provided (e.g., although the Register will contain census level data on off-site BNG gain, allocations of off-site gain and statutory biodiversity credit sales records there is currently no assurance that on-site data will be collated at census level in an easily accessible format).

Where census-level data is not available, data collection will be derived at the sample level, as either representative or illustrative samples.

For qualitative data collection, sampling is vital as it will not be possible to interview or gather questionnaires from all relevant stakeholders. We will sample from four groups of key stakeholders with each sample drawn using key criteria to ensure a range of experiences is captured. The four groups are:

- LPAs
- Developers/consultants preparing BNG plans for developers
- Landowners/BNG site providers/Habitat Banks
- Environmental NGOs

Non-probability quota sampling, that uses non-random ways to select elements (i.e., groups/individuals) from a sample population based on the judgement of the researcher, will be used to draw a sample from these groups.

- LPAs
    - Population = 343 LPAs
    - We will identify a representative sample of 10% of LPAs.
    - Types of authority to be sampled in proportion to their distribution across England: County Councils, District Councils, London Boroughs, Metropolitan Districts, Unitary Authorities and National Parks.
    - Other variables to be represented across the sample to include geographical location of authority (by region), density of population, number of developments coming forward for planning permission, BNG preparedness (based on BSG Ecology database).
- Developers/consultants preparing BNG Plans for developers

- Population includes house builders[14], companies involved in commercial, industrial and infrastructure development, minerals companies and ecological consultancies.
- We will identify an illustrative sample given that the size and heterogeneity of the population make using a representative sample infeasible.
- Types of companies to be sampled in proportion to the focus of their business: we suggest having equal numbers of ecological consultancies specialising in BNG and housing developers (c.30% each), with a smaller proportion of commercial, industrial and infrastructure developers and minerals companies (c.10% each).
- Other variables to be represented across the sample are: size of company (Small and medium-sized enterprises, Medium, Large); location of company UK head office (by region), length of experience at Nov 2023 (<1 year, 1-3 years, >4 years).

- Landowner/BNG site providers
  - Population includes landowners/estates, farmers, rural businesses, institutions (e.g., educational institutions), trusts and not-for-profit organisations (e.g., National Trust, Royal Society of Wildlife Trusts) and habitat banks.
  - We will identify an illustrative sample, given that the heterogeneity and changing composition of this stakeholder group make using a representative sample infeasible.
  - Types of landowner to be sampled according to their activity: i.e., farmers, private land management companies/estates, not for profit organisations and trusts, habitat banks.
  - Other variables to be represented across the sample are: size of land holding (small, medium, large), geographical location of landholding (by region), types of habitat.

  Note that with the opening of the BNG Register, all individuals and companies providing off-site biodiversity gain will be on the Register and in future the sample should be based on the register.

- Environmental NGOs
  - Population includes national and local NGOs with an interest in the protection and enhancement of the natural environment and/or access to nature.
  - We will identify an illustrative sample, given that the heterogeneity and rapid change in environmental NGOs, especially at the local level, make using a representative sample infeasible.

[14] UK Housebuilders Directory 2023 lists 2423 active housebuilders.

- Types of environmental NGOs to be sampled according to whether they focus on nature protection/enhancement or access to nature.
- Other variables to be represented across the sample are: level of action - local, regional [above local scale, similar to a county council scale] or national level, geographical location of landholding (by region).

For each group, the aim is to choose a set of stakeholders that exemplify variation in the sample.

It is likely that after mandatory BNG comes into force, more functionality will be built into the BNG mechanisms (e.g., the Register) and more census-level data will become available.

4.4.6. Potential Data Sources

Data will be collected from national and local databases and other sources. Table 4 in the appendices lists the data sources for each evaluation question and the data collection tools to be used (such as interviews and survey instruments). The list includes primary data (which will be generated by the evaluation, e.g., through interviews or surveys) and secondary data (existing evidence or data sets which will be accessed by the evaluation team). It also includes contextual or denominator data (data or facts about a population of interest which are independent of BNG and allow the contextualisation of sample evidence).

Not all potential data sources are well specified at present as the data structures and systems are evolving and currently in development or awaiting Defra Guidance.

Natural England Systems

Natural England are developing and will maintain the following digital systems for BNG:

- BNG Register
- Statutory Biodiversity Credits Sales Platform
- Operator system

The Evaluation Programme is based on an assumption on the part of the evaluation team that these systems will allow for exports, and that it will be possible for data to be exported in various forms (i.e., all relevant records for different samples) and as census-level data by attributes for full BNG analysis.

Within the current build there are a number of restrictions on the format and structure of the information. The evaluation team will specify the data fields needed from these systems once the data structure of the systems themselves and data holdings associated with the submissions to the system have been clarified (e.g., additional files are submitted to the registration process (BNG Plan, HMMP, statutory biodiversity metric etc)). It is anticipated that the format and structure of the information may change over time, as further development is accommodated, or as secondary legislation permits.

Biodiversity metric

Currently, the evaluation team will have to access the version of the biodiversity metric used by the developer to monitor the nature of the development associated with the BNG, and the extent and condition of habitats lost and gained, on- and off-site. The important issue for the evaluators is to have data derived from all biodiversity metric submissions in a coherent database to enable summary statistics from multiple developments.

The metric calculations (currently at version 4.0) are set out in a standard template which will facilitate analysis, but the records will be submitted in a format (Microsoft Excel), which limits the ability of evaluators to aggregate and analyse wider datasets. The detailed results for offsite metrics will be accessible as extracted data for the landowner and developer registrations with the Register, but not all the fields in the metric will be managed in this way.

LPA data

Some local authorities are requiring developers to submit a range of other data alongside their plans (including geospatial files of pre and post development habitats, condition data, and various species level data for pre site surveys/Ecological Impact Assessments (EcIA) etc.). LPAs are establishing these requirements through SPG, SPDs and TANs. There is no one, common approach, although many documents reference CIEEM guidance and some require implementation to meet adopted standards (BSI 8683). However, as these do not follow a mandated process, there is considerable variation, and it will be challenging for the evaluation to collate records from all authorities.

LPA data (or data submitted to LPAs) will also include the BNG Habitat Management and Monitoring Plans (BNG HMMP) and the records of post-development monitoring surveys (BNG Monitoring Reports). Natural England is developing a template for HMMPs and monitoring reports. This template is in draft as a text format document and is therefore unlikely to be able to support any sort of automated national collation. The approach that Developers will take to this should be assessed, as LPAs may also be requiring records of HMMP/monitoring reports in geospatial formats – which will be more effectively collated. Again, the copyright in the material submitted to the planning authority needs to confirm the openness and accessibility of data to make this usable for Evaluation Programme reporting.

The BNG processes, documentation and submission sequences are still subject to change. Defra's response to the Consultation (Defra, Jan 2023) has clarified the position related to the timing of document submissions by the developer, which in the Environment Act 2021 has been variously interpreted. Defra has proposed the introduction of the **BNG Statement** to accompany the planning application; the submission and sign-off of the BNG Plan and BNG HMMP are only formally required pre-commencement. The BNG Statement is not included in the data sources (Table 4) as its content is not yet finalised, although this will be done before November 2023. It may therefore be an important new resource for evaluation. Currently there are no plans to require submission other than to the LPAs with

the planning application and is not currently incorporated in Digital Services system requirements for registration.

Four other sources of data generated by or accessible from LPAs could also be valuable for BNG evaluation in the future, although they are unlikely to provide any data for the evaluation up to 2025.

1. The **Biodiversity Reports** generated under S40 of the Natural Environment and Rural Communities Act 2006 as amended by the S.103 of the Environment Act 2021 will hold data on the periodic reporting on the delivery of BNG (and other actions) within the LPA area (and will be updated on at least a 5 yearly cycle). The content of these reports is yet to be fully specified but is outlined in Annex C: 'Reporting requirements Biodiversity net gain data to be collected from planning authorities under the Natural Environment and Rural Communities (NERC) Act 2006 duty' within the Consultation on Biodiversity Net Gain Regulations and Implementation Defra January 2022.
2. The LPA (or higher authority) derived **Local Nature Recovery Strategies** from which to assess how BNG is matching LNRS targets. The standard and data formats for these are not defined and given the timeframes for their development initial local biodiversity targets are being informed by other strategies such as the Biodiversity Opportunity Area and Green Infrastructure strategies.
3. **Land Charges Register** should record all BNG delivery agreements – whether as a s106 agreement or as a Conservation Covenant. Although the level of detail is sparse, this may form an important 'census level' dataset. Whilst these Registers used to be maintained by the LPA, they are in the process of being transferred to the HMLR – but the task is a large one and some of the records will remain accessible from LPAs. Clarification is needed of what records are relevant to BNG.
4. **Species level records** will be needed to evaluate impact of BNG on biodiversity, and these may be derived from national systems (Nature Biodiversity Network), local environmental record centres and/or from BNG sites (e.g., from baseline EcIAs, species records and monitoring records – depending on the LPA requirements and developer approaches).

Only the Species Level Records have been included in Table 4 (appendices) to answer the Evaluation Questions, as the first two sources will not become available in the period of the current Evaluation Programme and it remains unclear how useful the data to be held in the Land Charges Register will be and how easily it could be collected before the transfer of the registers to HMLR has been completed.

Other BNG reporting datasets

In addition to these core stakeholder systems and records, there are several additional sources required by the Act (Environment Act, 2021) that may be relevant to the evaluation as they form important parts of the 'BNG system'. These include the registrations of Responsible Bodies for Conservation Covenants by the Secretary of State, the annual reports to be submitted by the Responsible Bodies that record the Conservation Covenants made and enforcement actions taken. The Responsible Body will

have a quasi-regulatory duty to enforce the covenant they hold with landowners. It is likely that these data will be subject to some guidance as the recording systems and report submission requirements and data accessibility are not yet specified.

Contextual data

Contextual or denominator data is data or facts about a population of interest which are independent of BNG and allow the contextualisation of sample evidence. Some examples of contextual data for BNG are population data and the Index of Multiple Deprivation data (data on deprivation levels at different geographical scales, including local authority scale – this maybe relevant for analysing the geographical distribution of biodiversity gain).

A series of contextual datasets will need to be collated (or accessible) to set the BNG in the landscape/area context, such as protected area data, within the context of other habitat creation/enhancement actions and past habitat creation options, land use/land cover, and social indicator data such as Index of Multiple Deprivation, Community Capitals data etc. These contextual datasets may also include basic geospatial/topographic layers (such as derived from Ordnance Survey MasterMap, administrative boundaries, natural character area) to provide the basis for geographic analysis and calculations (e.g., distances of off-site gain from development sites, extents of existing green infrastructure, BNG delivery by Natural Capital Assessments). Most of these data requirements are met by Open Government Licenced data sets and web feature services.

5. Approach to Developing a Baseline

The first step in the evaluation is to establish the baseline. The establishment of the baseline makes it possible to measure and evaluate changes following the introduction of mandatory BNG.

As the first stage of developing the baseline, the EQs were reviewed to determine which will require a baseline assessment. This is outlined in Table 2. All EQs which look at the nature and/or extent of change resulting from the BNG intervention will need a baseline assessment against which to compare the situation at later dates.

Table 2: EQs for baseline assessment by evaluation type

Evaluation Questions requiring baseline assessment	Baseline Research Questions
Impact (nature)	
2.1. To what extent is BNG delivery reducing the negative impacts of development on biodiversity?	What was the nature and scale of negative impacts of development on biodiversity before mandatory BNG?
2.2. To what extent is BNG delivery resulting in more and better-quality nature that is managed and maintained over the long-term?	How much nature, of what quality, was being delivered through development before mandatory BNG? To what extent was nature being managed and maintained before mandatory BNG, and for how long?
2.3. To what extent are local environmental priorities supported by BNG delivery?	To what extent were local environmental priorities supported by biodiversity gains delivered through planning permissions before mandatory BNG?
2.4. To what extent are national government environmental priorities supported by BNG delivery?	To what extent were national government environmental priorities supported by biodiversity gains delivered through planning permissions before mandatory BNG?
Impact (planning)	
3.1. To what extent does the BNG process provide increased certainty and clarity for stakeholders?	What level of certainty and clarity did stakeholders have about biodiversity gain through planning permissions before mandatory BNG?
3.2. To what extent are different stakeholders benefitting from the mandatory BNG process?	What benefits did different stakeholders get from BNG delivery through planning permissions before mandatory BNG?
3.3. To what extent are stakeholders following all guidance and considering biodiversity earlier within the planning process than they would have done pre-mandatory BNG?	At what stage in the planning process did stakeholders consider biodiversity before mandatory BNG?

Evaluation Questions requiring baseline assessment	Baseline Research Questions
Impact (people)	
4.1. To what extent are people who live and work in and around the sites where development takes place benefitting from improved proximity and access to nature?	To what extent did people who lived and worked in and around sites where development took place benefit from proximity and access to nature before mandatory BNG?

The established baseline will include qualitative and quantitative data for the analysis of process and impact aspects of implementation. Following the collection of baseline data - using the data sources and methods identified for the relevant evaluation questions as set out in Table 4 (Appendices) - data will be consolidated and analysed to provide an assessment of the baseline conditions prior to mandatory BNG. Thematic analysis (see Section 4.3.7) will be used to identify differences in attitudes and behaviour between stakeholders in the same group, such as differences between LPAs or between landowners.

6. Key Tasks

The evaluation programme commenced in September 2022 and will be running until March 2025. Table 3 outlines some of the key tasks which will be delivered as part of this programme.

Data will be collected in 'waves', with the first wave (Baseline) planned for May-July 2023. The benefit of this approach is that data collection is clearly planned as an activity within the evaluation, with intervals defined in advance, there is a specification of the data that needs to be collected in each wave, data can be compared at meaningful intervals and the data will all be available at the point of analysis.

Table 3: Evaluation Programme Key Tasks

*	**Report Completion**	^	**Delivery Task**	+	**Stakeholder Workshops**

Task	Description
*** Evaluation Plan**	Completion of a clear, detailed and actionable plan for the evaluation of BNG (this document)
^Establish Baseline	The baseline will describe the situation for the period prior to BNG becoming mandatory and enable post-go-live evaluation activities to robustly measure changes since baseline Task to include wave 1 data collection (baseline) and data analysis (Section 5)
^Process Evaluation (pre-go-live)	Includes wave 2 data collection and analysis of evidence to complete pre-go-live process evaluation/Interim Report See Evaluation Approach in Section 4.2
+Stakeholder Workshops	Sense check of baseline data: does this reflect sector stakeholders' perception of their sector at BNG baseline?
***Baseline Report**	Full description and assessment of the baseline evidence collected. Identification of data gaps and weaknesses and proposed solutions/proxies
***Process Evaluation Interim Report** (Internal Only)	Findings from the initial pre-go-live process evaluation. Identification of key issues and learning from the way in which BNG was implemented
^Process, Impact and VfM Evaluation (post go-live)	Involves the wave 3 collection and analysis of evidence to complete impact, process and VfM evaluations See Evaluation Approach in Section 4.2
***Process Evaluation Report**	Findings from the process evaluation. Identification of key issues and learning for future system development

Task	Description
***Interim Evaluation Report (Impact and Value for Money)** (Internal Only)	Key initial findings from the impact and VfM evaluations of mandatory BNG
+Stakeholder workshops	Exploration of stakeholder perceptions of progress towards achieving BNG objectives for nature, planning and people
***Final Evaluation Report (Process, Impact and Value for Money)**	Key findings from the process, impact and VfM evaluations of mandatory BNG Findings of deep dives

7. Risks and Limitations

It is essential that risks to the Evaluation Programme continue to be identified and managed throughout the course of the programme. Our risk management approach includes identifying risks; the maintenance of a risk register; putting in place identified mitigation and corrective action; and communication with Natural England.

As part of the Evaluation Programme a risk register has been developed in collaboration with Natural England and is being monitored, updated and addressed regularly.

The key risks and the limitations/constraints that these place on the Evaluation Programme are identified below along with mitigating actions that have been established for these. Please note that this list is not comprehensive – the risk register is fairly meticulous and includes a large number of more minor risks; the risks summarised below are those we feel are most important to highlight.

7.1. Data

As outlined throughout the Evaluation Plan, there are some significant uncertainties regarding both the format and completeness of data which has been identified as a potential source for the evaluation. This is a significant risk, as the availability of suitable data is essential for the evaluation to be effective.

The following examples describe how certain documents and files important to the Evaluation Programme will be collated in formats which inhibit data extraction, or where there are other concerns about data completeness:

- **HMMPs** detailing how on-site and off-site BNG habitats will be legally secured, managed and monitored are recommended to be completed in an MS Word template developed by Natural England to be submitted to local authorities. While HMMPs for off-site BNG will be uploaded to the Register, the current non-digitised format of the templates means that data cannot easily be extracted through machine reading, which will make it difficult to access the data for on-site BNG.

- **Statutory biodiversity metric outputs** will be held on the BNG Register for off-site gain sites in MS Excel format. Although work is ongoing to convert the metric into a digital format, this is not expected to be completed in time to be utilised for this evaluation.

- There is an assumption that the BNG systems will allow for records of spatial data to be in **geospatial file formats**. There is also the assumption that users will have the skills and abilities to accurately create data in these formats. There are some uncertainties remaining both about the format and completeness of these records, whether they will be maintained within a single system and what level of access

Natural England/users will have to data that is submitted by the developer (in terms of copyright and licencing).

- A further current uncertainty is the nature and **extent of the records of verification of BNG delivery**. This is a responsibility of the developer, landowner or a responsible body and there is no national system that will collate these records – which in themselves are of non-standard format. There is a role for LPAs to verify that BNG gains have been delivered and this could provide valuable data on individual sites, but it may require additional data collection approaches to obtain census-level information.

Census based data would be preferable for the Evaluation Programme, as it would enable representative and in-depth analysis. The current formats of the metric and HMMPs and the potential lack of complete geospatial data means that it will be impossible to monitor BNG delivery at a national or regional scale as part of the Evaluation Programme. This is due to the amount of time that would be required to extract and collate data at this census level, without the ability to easily machine read the data. Analysis would therefore have to be done manually for sample level data. The limited availability of census level data may restrict the extent to which certain EQs can be answered.

Potentially, the Digital Services systems can support data exchange or direct reporting (Power BI, etc) if Natural England build some of the required queries directly into the tools. This would need to be included in the minimum viable product (MVP) and it is unlikely that many of these requirements will be fulfilled within the first release.

Following the identification of potential data sources (see Section 4.3) we are working closely with Natural England to explore options for ensuring data is accessible, extractable and available for analysis.

7.2. Stakeholders

Stakeholder engagement is crucial as a means of incorporating the perspectives of different actors and without this the validity of the Evaluation Programme would be limited.

There is the possibility that BNG stakeholders (local authorities in particular) will be unwilling to engage in evaluation activities due to busy work schedules. To mitigate this, we will continue to aim for early and clear communication with stakeholders and to make them aware of the importance of participation as well as highlighting the benefits of engagement (e.g., information sharing and peer learning). We will aim to reduce overlap in the stakeholders being approached for the various interviews/workshops required as part of the Evaluation Programme, to limit the number of requests being made of them.

To mitigate against the issue of structural barriers to participation in meetings and consultations by minorities and disadvantaged persons or groups, we have developed a system to compensate targeted stakeholders for their time taken to input into any engagement activities held as part of this project. This system should serve to make our

project and stakeholder engagement process more inclusive and ensure a wide range of groups are represented.

7.3. Maintaining Contractor Independence

The Evaluation Programme is being completed in close collaboration with Natural England using a developmental evaluation approach. To ensure that independence is maintained, both the Eunomia team and Natural England teams have adopted key evaluation principles and good practice, including holding regular updates and reminders to reinforce the value of independence and an accountability mechanism through which Eunomia are able to flag to Defra if contractor independence is being compromised by Natural England's contract management. Further the Evaluation Programme is being completed as an objective, evidenced based assessment against the Evaluation Framework developed by Collingwood Environmental Planning and partners (2021) to provide transparency.

8. Governance

8.1. Audience of the BNG Evaluation Programme

The primary intended audience for this Evaluation Programme is Natural England and Defra.

The Evaluation Programme will provide the evidence upon which Natural England and Defra can base amendments and improvements to BNG delivery mechanisms, as and when appropriate, through regular feedback and learning loops. The Evaluation Programme will also act as an accountability mechanism, providing a transparent and reliable assessment of BNG's value and impact which will enable both Natural England and Defra to hold themselves to account in terms of the policy delivery.

Further intended audiences of the Evaluation Plan are:

- **Central Government** – as a core stakeholder with an interest that government expenditure is spent judiciously, and that the policy implemented provides effective and efficient services for the public and natural environment.
- **Local Government** – as core stakeholders with new responsibilities for implementing, delivering, monitoring and reporting on BNG (e.g., through local authority planners and ecologists).
- **Developers** – as core stakeholders responsible for the development and submission of planning applications for developments, including the completion of BNG documentation. Developers will need to specify how BNG will be delivered (i.e., on-site, off-site, or statutory credits) and managed in the future. Furthermore, developers will be responsible for the delivery/ financing delivery of biodiversity gains for which they are responsible for.
- **Landowners** – as core stakeholders creating and/or enhancing habitats on their land to deliver/finance delivery of BNG and generating biodiversity units which represents potential to diversify incomes.
- **Local Communities (including the public)** – as core stakeholders benefiting from access to BNG sites.
- **Environmental Groups (e.g., NGOs, LERCs, etc.)** – as core stakeholders interested in whether the policy is delivering its expected benefits for nature and communities, and as providers of land for off-site BNG delivery.

Other Stakeholders: those who will be impacted by BNG or who will impact BNG (see Section 2.1.3. Key Stakeholders).

8.2. Collaboration between NE and Eunomia

As required to deliver a complexity-appropriate evaluation, the evaluation team works closely with Natural England. Mechanisms set up to ensure effective coordination and collaboration include the use of Working Group and Steering Group meetings. The roles and responsibilities of the teams/groups involved in the Evaluation Programme are outlined below:

- **Eunomia team**
    - In collaboration with our associates (GeoData Institute (University of Southampton), Louise Tricklebank, Cissbury Consulting Ltd, BSG Ecology, and CECAN Ltd), the Eunomia team is responsible for the management and delivery of the BNG Evaluation Programme.
- **Natural England M&E Team**
    - The NE M&E team is responsible for managing the Evaluation contract, ensuring the delivery of the contract to time, and required standards. The M&E team are also responsible for liaising between NE BNG delivery teams and the Eunomia team to facilitate collaborative working and the feedback of evaluation findings.
- **Natural England's BNG delivery teams**
    - Consisting of the BNG Policy, statutory credits scheme, BNG Digital Services, and the metric teams. These teams will, where feasible, act upon evaluation findings in association with their delivery area. These teams may also participate in workshops, focus groups and/or interviews focusing on their delivery areas.
- **Working Group**
    - Consisting of the project manager and the project director from the Eunomia Team, and the members of the Natural England M&E Team.
    - The Working Group meets every two to four weeks to:
        - provide two-way updates;
        - share issues and ideas;
        - collaboratively problem solve and progress the delivery of priority tasks.
- **Steering Group**
    - The Steering Group comprises lead members from the Natural England monitoring and evaluation team, Natural England staff from other BNG workstreams and representatives from Defra and DLUHC. Senior members of Eunomia's team attend Steering Group meetings.
    - The Steering Group meets quarterly to receive project progress updates, discuss emerging findings, provide feedback on draft deliverables and advise on future work.

Close collaboration helps to ensure that the Evaluation Programme is delivered effectively and is fit for purpose. It has also been critical in allowing the Natural England teams to make sense of emerging evaluation findings and more effectively embed learning with the BNG policy design and delivery teams.

8.3. Decision Making Mechanisms

Both the evaluators and the Natural England evaluation team are committed to the use of collaborative and agile ways of working and this helps to facilitate quick and effective decision making. Within the Evaluation Programme clear mechanisms for decision making have been established to ensure that decisions can be made efficiently and effectively, enabling progress on the evaluation to continue and not be held up due to uncertainties and indecision.

The main decision-making mechanisms are:

- Working Group: forum for collaborative decisions on the implementation of the agreed project plan for the evaluation and decisions about modifications within the overall scope of this project plan
- Project Steering Group: provides a steer on the direction and priorities for the evaluation, for example on topics for deep dives to provide in depth understanding of specific issues identified by the evaluation. In addition to providing feedback on the Evaluation Programme, the Steering Group also ensures that the relevant people can action or escalate any findings from the Evaluation Programme as it progresses.

The evaluation team has mechanisms in place to ensure that the correct expertise and input is provided to support informed decisions. Technical experts within the team delivering the BNG Evaluation Programme are on hand to provide input and evidence, and 'key contacts' have been established within both Natural England and the Eunomia evaluation team, to ensure efficient communication and decision making.

8.4. Quality Assurance

It is essential that quality control is applied consistently and effectively throughout the design and implementation of the Evaluation Programme for BNG. As such, a thorough quality assurance approach has been designed into the Evaluation Programme.

This approach to quality assurance has been designed with a focus on planning, undertaking checks, and acting to achieve project quality standards at all stages of the programme. The Evaluation Programme will be completed following the relevant government guidance and complying with the relevant codes of practice, including The Magenta Book (HM Treasury, 2020) and Defra's Joint Code of Practice for Research (Mayne, 2017). Further, the quality assurance processes which will continue to be applied thought the programme are guided by the Research Councils UK Policy and Guidelines on the Governance of Good Research Conduct; the Social Research Associations Ethics Guidelines (2003); and the General Data Protection Regulation (GDPR).

As part of our quality assurance approach all outputs from the Evaluation Programme, (including the 'Biodiversity Net Gain Evaluation Plan') go through a dedicated internal

quality assurance check to ensure they meet high standards of presentation and accessibility.

This quality assurance approach will continue to help ensure that the aims and approaches of the Evaluation Programme are robust. Further it will help ensure that the processes used to gather and interpret the results of research are appropriate, rigorous, repeatable, and auditable.

9. Glossary

Word/Term	Definition
Biodiversity gain plan	A document which sets out how a development will deliver BNG, including information not captured in the statutory biodiversity metric and how gains will be managed and maintained in the future. This plan allows the planning authority to check whether the proposals meet the biodiversity gain objective.
Biodiversity gain site register	A national log of net gain sites, which is a requirement of the Environment Act. It aims to prevent double counting, providing consistency and to facilitate monitoring.
Biodiversity metric	A biodiversity accounting tool that uses habitats as a proxy to calculate gains and losses as a result of a development. The metric covering area terrestrial and inter-tidal habitat types, as well as hedgerow and watercourse linear habitat types. The most recent version, Biodiversity Metric 4.0, was published in March 2023. The 'statutory biodiversity metric' will be based on version 4.0 and come into play in November, when BNG goes live.
Biodiversity net gain (BNG)	An approach to development, land and marine management that leaves biodiversity in a measurably better state than before the development took place. The Environment Act will require that new development delivers a minimum 10% increase in biodiversity, compared to the level before.
Biodiversity Net Gain Statement	A Statement submitted by the developer with the planning application that describes the baseline and net gain and onsite/offsite requirements.
BNG Monitoring Reports	Periodic reports submitted in line with the HMMP that report on the achievements of habitat and habitat condition against the targets set by the Gain Plan.
Biodiversity unit	A unit as measured by the statutory biodiversity metric which represents a combined measure of habitat distinctiveness, area and condition. The production of a biodiversity unit in the habitat market refers to an increase in the biodiversity value of land by one unit. This is the collective term for the three types of biodiversity unit which are not interchangeable: Habitat Unit, Hedgerow Unit and Watercourse Units.

Conservation covenants	Voluntary but legally binding agreements under the Environment Act between a landowner and a designated "responsible body" (such as a conservation charity, public body or for-profit body) to conserve the natural or heritage features of the land.
Cost Benefit Analysis	A methodology for comparing the full social costs with the full social benefits of a policy.
Statutory biodiversity credits scheme	A mechanism for developers to meet their biodiversity net gain obligations where they have been unable to secure this through the creation and/or enhancement of habitat on-site or off-site. Developers will be able to purchase statutory biodiversity credits as a last resort option if they are unable to achieve BNG through on-site or off-site units.
Evaluation Plan	The report developed at the beginning of the evaluation process that presents a clear, detailed and actionable plan for the evaluation of BNG, including the plan for establishing a baseline.
Evaluation Programme	The programme of work developed to provide Defra, Natural England and other BNG stakeholders with an evidence-based judgement on the extent to which the policy is being implemented effectively (process evaluation), is achieving its stated outcomes/objectives (impact evaluation) and is providing a cost-effective means of delivering biodiversity gain (value for money evaluation).
Habitat banks	Parcels of land that can be used to create a significant uplift in biodiversity.
Habitat Management and Monitoring Plan (HMMP)	A Plan that details how an on-site and off-site BNG habitat will be legally secured, managed and monitored over a thirty-year period.
Habitat Survey and Condition Assessment	A process undertaken to determine the baseline biodiversity value of a site by assessing both the types of habitats present and their condition as required for use in the statutory biodiversity metric. Assessments need to be conducted by competent practitioners.
Habitat provision	The creation, restoration or enhancement of habitats where that would deliver additional gains in biodiversity units eligible to be included in a biodiversity gain plan.

Impact Evaluation	An objective test of what changes have occurred, the scale of those changes and an assessment of the extent to which they can be attributed to an intervention.
Local Nature Recovery Strategies (LNRS)	Local Nature Recovery Strategies are a new system of spatial strategies for nature under the Environment Act, covering the whole of England. Locally led by an appropriate "responsible authority", these will identify the opportunities and priorities for enhancing biodiversity and supporting wider objectives such as mitigating or adapting to climate change in an area.
Mitigation hierarchy	The principle that environmental harm resulting from a development should be avoided (through locating development where there will be less harmful impacts), adequately mitigated, or, as a last resort, compensated for.
National Planning Policy Framework	The National Planning Policy Framework 2021 sets out government's planning policies for England and how these are expected to be applied.
Offsetting	The creation or enhancement of wildlife habitat to compensate for loss or degradation elsewhere.
Outcome	The result or effect of an action, situation, or event.
Outdoor Recreation Valuation Tool	A map-based web application designed to help quantify the benefits of accessible outdoor recreation sites in England and Wales.
Participatory Systems Mapping	A participatory modelling methodology in which a group of stakeholders collaboratively develop a simple causal map of an issue in a workshop.
Planning authority	A planning authority is responsible for deciding whether a development, which could be anything from an extension on a house to a new shopping centre, should go ahead. This includes borough, district and county councils, unitary authorities, national park authorities and development corporations where relevant.
Planning obligations[15]	Planning obligations are legal obligations under Section 106 of the Town and Country Planning Act entered into to mitigate the impacts of a development proposal by a person with an interest in the land and the local planning authority.

[15] Also known as Section 106 agreements

Process Evaluation	Analysis of whether an intervention is being implemented as intended; whether the design is working; and/or what is working more or less well and why.
Responsible Body	A body registered by the Secretary of State with whom landowners can establish conservation covenants to secure the habitat gain. These bodies will have an enforcement duty on the delivery of the actions.
Theory of Change	A method that explains how a given intervention, or set of interventions, are expected to lead to a specific development change, drawing on a causal analysis based on available evidence.
Value for Money Evaluation	A comparison of the benefits and costs of an intervention.

10. References

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Appendices

Table 4 lists potential methods/tools and data sources for each EQ, grouped under the respective Evaluation to which they belong (Process, Impact (Nature), Impact (Planning), Impact (People), and Value for Money).

As the Evaluation Programme is progressed and each EQ is considered in more detail, the quality, format and completeness of data sets will become better understood and it will therefore be clearer which data set(s) are preferable. This, along with the size of samples chosen, will also influence which method/ tool is preferable for analysis.

Table 4: Potential Data sources and Methods/Tools to answer the Evaluation Questions (up to March 2025).
[B] = The Evaluation Questions requiring a baseline assessment.

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
	Process		
1.1	To what extent have the Environment Act 2021 requirements for biodiversity gain in planning been met?	Interviews with NE systems managers (Register, credit scheme); Interviews with Planning Authorities (after Go-live) LPA data (BNG Plans; planning applications/decisions); LPA BNG management systems Environment Act 2021; response to Consultation on BNG Regulations; BNG Regulations (after Go-live) BSG Ecology Database detailing which LPAs have BNG Local Plans in place and already require BNG as part of planning process or Survey of LPAs	Interviews (Section 4.4.1) Sample level data review (Section 4.4.5) Desk based review (Section 4.3.6) Data review (Section 4.3.4) Survey (Section 4.4.2)

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
1.2	To what extent does mandatory BNG provide a standardised approach through which development delivers biodiversity net gain with consistency and transparency?	LPA data (BNG Plans; planning applications/decisions) BSG Ecology database detailing which LPAs have BNG Local Plans in place and already require BNG as part of planning process or Survey of LPAs Interviews and/or Survey of developers	Sample level data review (Section 4.4.5) Data review (Section 4.3.4) Survey (Section 4.4.2) Interviews (Section 4.4.1)
1.3	To what extent have the methods for setting up BNG tools and systems (biodiversity metric; digital service; statutory credits system; operator system) worked well or not so well, and for whom? What are the lessons learned?	Interviews with Natural England systems managers (Register, statutory credit system, Operator system, metric) Interviews / Survey with LPAs, developers/consultants, landowners	Interviews (Section 4.4.1) Survey (Section 4.4.2)
1.4	To what extent are BNG tools and systems (biodiversity metric; digital service; statutory credits system; operator system) supporting effective BNG implementation?	Interviews / Survey with LPAs, developers/consultants, landowners, NGOs Interviews with Natural England systems managers (Register, statutory credit system, Operator system, metric)	Interviews (Section 4.4.1) Survey (Section 4.4.2)
1.5	To what extent are stakeholder (external to Defra/NE) initiatives and tools facilitating and	Interviews with LPAs, developers, consultants, landowners and/or survey LGA's 'BNG Practitioner Network': advice and examples	Interviews (Section 4.4.1) Survey (Section 4.4.2) Desk based review (Section 4.3.6) Contribution analysis (Section 4.3.1)

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
	supporting effective BNG implementation?	Interviews with private sector systems and tool providers Interviews with Habitat Banks Sample of LPA planning policy tools and guidance	
1.6	To what extent do stakeholders have adequate capability, capacity and resource to implement BNG effectively? And where has it come from?	Interviews with LPAs, developers, landowners and/or survey (incl Associations e.g., CIEEM, ALGE) LGA's 'BNG Practitioner Network'; sample of LPA planning policy tools and guidance; Defra and Natural England guidance and funding	Interviews (Section 4.4.1) Survey (Section 4.4.2) Desk based review (Section 4.3.6)
1.7	To what extent is mandatory BNG securing commitments to provide a net gain in biodiversity in ways that support local nature recovery priorities?	LPA data (BNG Plans; planning applications/decisions; LNRS/Biodiversity Opportunity Areas/Green Infrastructure strategies etc) BNG Plans, BNG Register Data on location of BNG sites in relation to development where loss of biodiversity has occurred	Sample level data review (Section 4.4.5) Geospatial analysis (Section 4.3.8) Census level data review (Section 4.4.5)
1.8	To what extent has the development and implementation of BNG been influenced by external factors?	Interviews with LPAs, developers, landowners Academic papers PSM output	Interviews (Section 4.4.1) Desk based review (Section 4.3.6) Contribution analysis (Section 4.3.1) Deep dives (if appropriate) (Section 4.3.2) PSM (Section 4.3.3)
	Impact (Nature)		

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
2.1 [B]	To what extent is BNG delivery reducing the negative impacts of development on biodiversity?	National data collated from BNG Register and LPA records of BNG (s40 Biodiversity Reports or other IT systems) LPA data (BNG Plans; planning applications/decisions; HMMPs; BNG Monitoring Reports Other BNG reporting datasets: Responsible Body annual reports Interviews with LPAs, developers	Census level data review (Section 4.4.5) Sample level data review (Section 4.4.5) Contribution analysis (Section 4.3.1) Interviews (Section 4.4.1) Survey (Section 4.4.2)
2.2 [B]	To what extent is BNG delivery resulting in more and better-quality nature that is managed and maintained over the long-term?	LPA data (BNG Plans; planning applications/decisions; HMMPs, BNG Monitoring Reports) NE systems (statutory credits, Register, metric) Contextual data (NE Habitat Spatial Audit Report; records from other conservation regulations SANGS, compensation sites etc) Interviews and/or Survey	Sample level data review (Section 4.4.5) Contribution analysis (Section 4.3.1) Interviews (Section 4.4.1) Survey (Section 4.4.2)
2.3 [B]	To what extent are local environmental priorities supported by BNG delivery?	LPA data (BNG Plans; LNRS/Green Infrastructure Strategies/Biodiversity Action Plans) Biodiversity Opportunity Areas (pre-LNRS) Interviews with LPAs and environmental NGOs and/or Survey	Sample level data review (Section 4.4.5) Interviews (Section 4.4.1) Survey (Section 4.4.2)

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
2.4 [B]	To what extent are national government environmental priorities supported by BNG delivery?	NE systems (statutory credits, Register) LPA data (BNG Plans; metric, planning applications/decisions; HMMPs; BNG Monitoring Reports Interviews and/or Focus Groups with national stakeholders Other BNG reporting data: Peer-reviewed and 'grey' literature including reports by Defra family and other government departments	Census level data review (Section 4.4.5) Sample level data review (Section 4.4.5) Interviews (Section 4.4.1) Focus Groups (Section 4.4.3) Desk based review (Section 4.3.6)
2.5	What consequential benefits and disbenefits for biodiversity and nature have resulted from BNG delivery?	Academic papers Interviews with LPAs, developers, landowners, NGOs and Defra/Natural England	Desk based review (Section 4.3.6) Interviews (Section 4.4.1) Contribution analysis (Section 4.3.1)
	Impact (Planning)		
3.1 [B]	To what extent does the BNG process provide increased certainty and clarity for stakeholders?	LPA data (planning applications/decisions; supplementary planning documents) Internal assessments of NE systems (Register, metric, credit system) National statistics (planning application statistics)	Sample level data review (Section 4.4.5) Census level data review (Section 4.4.5) Contribution analysis (Section 4.3.1)
3.2 [B]	To what extent are different stakeholders benefitting from the mandatory BNG process?	LPA data (planning applications/decisions) NE systems (Register)	Sample level data review (Section 4.4.5) Census level data review (Section 4.4.5) Interviews (Section 4.4.1)

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
		Interviews and/or Survey of LPAs, developers, landowners, environmental NGOs, LERCs, Private sector providers	Survey (Section 4.4.2)
3.3 [B]	To what extent are stakeholders following all guidance and considering biodiversity earlier within the planning process than they would have done pre-mandatory BNG?	LPA data (planning applications/decisions) Interviews and/or Survey with LPAs Interviews with developers, consultants National statistics (planning application statistics)	Sample level data review (Section 4.4.5) Interviews (Section 4.4.1) Survey (Section 4.4.2) Census level data reviews (Section 4.4.5)
3.4	What unintended consequences or benefits for stakeholders in the planning system have resulted from BNG delivery?	National statistics (BNG Register and credit system; planning application statistics) LPA data (planning applications/decisions) Interviews with LPAs, developers, landowners, environmental NGOs, Defra/Natural England Stakeholder workshops	Census level data reviews (Section 4.4.5) Sample level data reviews (Section 4.4.5) Interviews (Section 4.4.1) Focus Groups (Section 4.4.3) Contribution analysis (Section 4.3.1)
	Impact (People)		
4.1 [B]	To what extent are people who live and work in and around the sites where development takes place benefitting from improved proximity and access to nature?	NE systems (BNG Register) LPA data (BNG Plans; planning permission decisions; HMMPs, BNG Monitoring Reports) Contextual data (ONS population data; Natural England GI Mapping, Accessible Natural Greenspace standards, IMD)	Sample level data review (Section 4.4.5) Interviews (Section 4.4.1) Survey (Section 4.4.2) Focus Groups (Section 4.4.34.4.4) Deep dive (if appropriate) (Section 4.3.2) Geospatial analysis (Section 4.3.8)

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
		Interviews and/or Surveys/Focus groups	
4.2	What consequential benefits and disbenefits for local people have resulted from BNG delivery?	NE systems (Register) LPA data (BNG Plan; HMMPs) Interviews with LPAs, developers, landowners, environmental NGOs, Defra/Natural England Stakeholder workshops	Sample level data reviews (Section 4.4.5) Deep Dive (if appropriate) (Section 4.3.2) Interviews (Section 4.4.1) Focus Groups (Section 4.4.3) Contribution analysis (Section 4.3.1)
4.3	To what extent are the benefits and costs of BNG implementation distributed equitably between different socioeconomic groups?	NE systems (Register)/LPA data (BNG Plans etc) Contextual data (e.g., ONS population data, IMD, Community Capitals data) Survey and/or Focus groups	Sample level data review (Section 4.4.5) Survey (Section 4.4.2) Focus Groups (Section 4.4.3) Deep Dive (if appropriate) (Section 4.3.2)
	Value for Money		
5.1	What has been the cost of implementing BNG to the relevant stakeholders?	Defra Reporting Programme Budget and Business Case LPA, developer interviews	Cost Benefit Analysis (Section 4.3.5) Interviews (Section 4.4.1)
5.2	What is the value of the primary benefits generated by BNG implementation?	LPA data (BNG Plans) NE systems (Register/statutory credit) LPA Interviews and/or Surveys Peer-reviewed and 'grey' literature on BNG implementation, e.g., from Defra family, other government	Sample level data review (Section 4.4.5) Outdoor Recreation Valuation Tool (ORVAL) Interviews (Section 4.4.1) Survey (Section 4.4.2) Desk based research (Section 4.3.6)

EQ No.	Evaluation Question	Potential Data Sources (Section 4.4.6)	Potential Methods/Tools
		departments and agencies, LPAs, professional associations, etc.	
5.3	What is the value of the consequential benefits and disbenefits generated by BNG implementation?	LPA data (BNG Plans) Contextual data (LERC Species Level Records) NE systems (Register/ statutory credit system) Interviews and/or Survey	Sample level data reviews (Section 4.4.5) Interviews (Section 4.4.1) Survey (Section 4.4.2) Deep dive (if appropriate) (Section 4.3.2)
5.4	To what extent do the benefits of BNG implementation outweigh the costs?	Outputs of previous VfM questions, Impact (Nature) questions and Impact (People) questions	Desk based research (Section 4.3.6)

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