



Department  
for Environment  
Food & Rural Affairs

## C23386 – Development of biodiversity modelling and scenarios for the goals and targets of the Kunming-Montreal Global Biodiversity Framework

### Order Form – Contract for Research and Development Goods and Services

<b>Purchase Order Number</b>	To be confirmed
<b>Customer</b>	DEFRA Seacole Building, 2 Marsham St, London SW1P 4DF
<b>Contractor(s)</b>	WCMC <sup>1</sup> 219 HUNTINGTON ROAD CAMBRIDGE CAMBRIDGESHIRE CB3 0DL
<b>Co-Funder(s)</b>	Not applicable
<b>Defra Group Members</b>	
<b>The Agreement</b>	<p>This Order is part of the Agreement and is subject to the terms and conditions appended at Appendix 1 and shall come into effect on the Start Date.</p> <p>Unless the context otherwise requires, capitalised expressions used in this Order have the same meanings as in the terms and conditions.</p> <p>The following documents are incorporated into the Agreement. If there is any conflict, the following order of precedence applies (in descending order):</p>

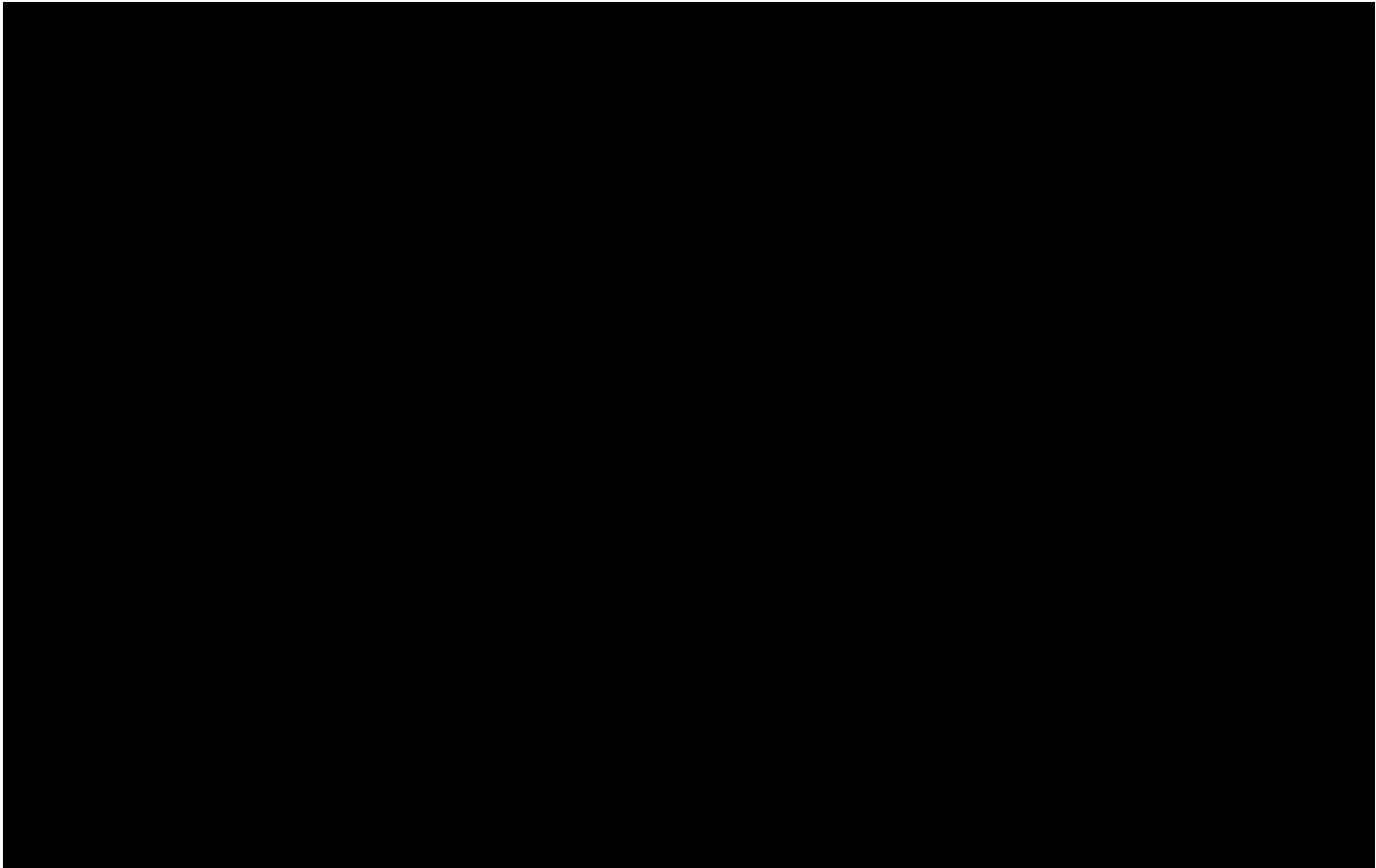
<sup>1</sup> WCMC works in collaboration with UNEP at the UN Environment Programme World Conservation Monitoring Centre (UNEP-WCMC), and all work under this contract will be delivered under these collaboration arrangements as UNEP-WCMC, and therefore subject to approval by UNEP.

	<p>this Order;</p> <p>the terms and conditions at Appendix 1; and</p> <p>the remaining Appendices (if any) in equal order of precedence.</p>
<b>Deliverables</b>	<p>Goods:</p> <p>See Appendix 2 and 3 – Specification / Description / Costings</p>
	<p><b>Services:</b></p> <p><b>See Appendix 2 and 3 – Specification / Description / Costings</b></p>
<b>Milestone Delays (Clause 18.2.10)</b>	Please refer to Clause 18.2. of the Terms and Conditions
<b>Start Date</b>	10 June 2024
<b>Expiry Date</b>	<p>31 December 2025</p> <p>Please refer to Clause 18.10. of the Terms and Conditions</p> <p>Given the increased budget we are required to get further approval for this from STAR chamber. To allow for work to commence ASAP whilst we seek this further approval for the uplift, we will use the wholly/partly termination clause (18.10) of the new R&amp;D. [REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p> <p>[REDACTED]</p>
<b>Extension Period (Clause 5.2)</b>	<p>Due to unknown situation and/or other factors beyond the control of both parties; an option for an extension may be executed if it is necessary. Any extension must be agreed with the Authority and will be processed via a Contract Change Note (CCN) issued by DGC.</p>
<b>Charges</b>	<p>The Charges for the Deliverables shall be as set out in Appendix 3 – Charges. Unless and to the extent otherwise expressly stated in Appendix 3, the Charges are fixed for the duration of the Agreement.</p>
<b>Payment including Payment by Co-funder(s)</b>	[REDACTED]

<b>Customer's Authorised Representative(s)</b>	
<b>Contractor's Authorised Representative</b>	
<b>Co-funder's Authorised Representative</b>	Not applicable
<b>Optional Intellectual Property Rights ("IPR") Clauses</b>	<p>Option A: Customer owns all New IPR with non-exclusive Contractor rights to all New IPR for the current contract including for the purpose of exploitation of such New IPR.</p> <p>DEFRA grants WCMC and sub-contracted partners on this agreement an irrevocable licence to use the new findings for non-commercial uses in perpetuity.</p>
<b>Contractor's general liability cap</b>	
<b>Progress Meetings and Progress Reports</b>	<p>Following consideration of this Specification of requirements and signing of contracts, the Supplier and Defra will have a kick-off meeting to discuss the Supplier proposal, timelines, details of the methodology they will use to conduct the analysis and meet the outcomes outlined before. Defra are open to having discussions with the Supplier about how outputs can be delivered and the sequencing of those, as well as how the scope could be tweaked to capitalise on the expertise of the Supplier where they complement or enhance the objectives.</p> <p>Following confirmation and signature of contract, details of outputs and expected timelines will be confirmed.</p> <p>The Supplier will designate key points of contact (Neil Burgess and Sam Hill), who will attend monthly meetings with the Defra contract manager to discuss progress, arising issues, and agree risk mitigation measures. At each meeting the project risk register will be discussed, and the Supplier is expected to provide an update of the risk register at least 1 working day prior to project management meetings. Frequency of meetings can be increased ahead of/following deliverables.</p>

	<p>The Supplier will also convene a monthly meeting of the partnership to ensure that work is progressing to schedule and any challenges can be rapidly resolved. This partnership meeting will take place ahead of the meeting between the Supplier and Defra so that relevant issues can be brought forward and resolved as needed.</p> <p>At a minimum, the Steering Committee and DEFRA will meet every 3 months, including at project kick-off, midway through the project, and at project close-out. They will evaluate outputs and contribute to the quality assurance process for the interim and final report. More regular meetings will be arranged between the Supplier and the project officers assigned to the project.</p>
<b>Address for notices</b>	<p><b>Customer:</b> DEFRA</p> <p><b>Contractor:</b> WCMC, on behalf of the consortium made up of: UK Centre for Ecology and Hydrology, The University Court of the University of Edinburgh, and The Natural History Museum Trading Company Limited</p>
<b>Key Personnel of the Contractor</b>	
<b>Procedures and Policies</b>	<p>The new Defra group open access policy for research publications can be viewed on gov.uk at <a href="#">Research at Defra: open access policy for publications</a>.</p>
<b>Commercial Exploitation (Clause 11)</b>	<p>Clause 11 (Commercial Exploitation) shall apply to this Agreement:</p> <p>No</p>
<b>Special Terms</b>	<p>The Authority will use the wholly/partly termination clause (18.10) of the new R&amp;D Terms and Conditions. This termination clause will only be initiated once spend from this project surpasses £300,000, at which point the project would be terminated if additional funding is not secured. This condition would need to be applied to all organisations being sub-contracted by WCMC.</p>
<b>Additional Insurance</b>	<p>Not Applicable</p>

<b>Further Data Protection Provisions</b>	The further data protection provisions as contained at Annex 1 of the Terms and Conditions are applicable to this Agreement were indicated below:  No
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## **Appendix 1: R&D Terms and Conditions**

*The terms and conditions applicable to this requirement can be found on the website below;*

[Research and development terms and conditions - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/procurement/procurement-guidance/research-and-development-terms-and-conditions)

## **Appendix 2: Specification/Description**

### **1. PROJECT BACKGROUND**

#### **a) The Kunming-Montreal Global Biodiversity Framework**

Nature is declining globally at rates unprecedented in human history with around 1 million animal and plant species threatened with extinction within decades<sup>1</sup>. Human activities have pushed many species to the brink of extinction and ecosystems to degradation through land- and sea-use change, overexploitation, pollution, climate change, and invasive species. Biodiversity loss is not only an environmental issue, but also a developmental, economic, security, and social one. To date, agreements to halt and reverse biodiversity loss have failed to reach the desired targets.

In December 2022, the 15th meeting of the Conference of the Parties (COP15) to the Convention on Biological Diversity (CBD) adopted the Kunming-Montreal Global Biodiversity Framework (KMGBF), a landmark agreement for biodiversity. It sets out four long-term goals to be achieved by 2050, related to the CBD's 2050 Vision for Biodiversity of *"a world of living in harmony with nature where, by 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people"*, and 23 short-term targets to be achieved by 2030, which will contribute towards achieving these goals.

COP15 also adopted a monitoring framework which will be used for monitoring and reporting progress against the goals and targets. This consists of mandatory Headline Indicators (high-level indicators), and a selection of optional indicators - Component indicators (covering detailed components of the goals/targets), Complementary indicators (for in-depth analysis at different scales) and Global-level binary indicators (collated from binary "yes/no" responses in national reports). These can be supplemented by national/subnational indicators as appropriate.

All Parties are requested to revise and update their National Biodiversity Strategies and Action Plans (NBSAPs) by COP16 to communicate their national targets that will contribute to the KMGBF, detailing which indicators from the Monitoring Framework will be used to monitor those targets.

Parties are also requested to submit their National Reports in 2026 and 2029, ahead of COP17 and COP19 respectively, detailing progress made against the targets set out in the NBSAP providing data on the headline, and possibly others, indicators.

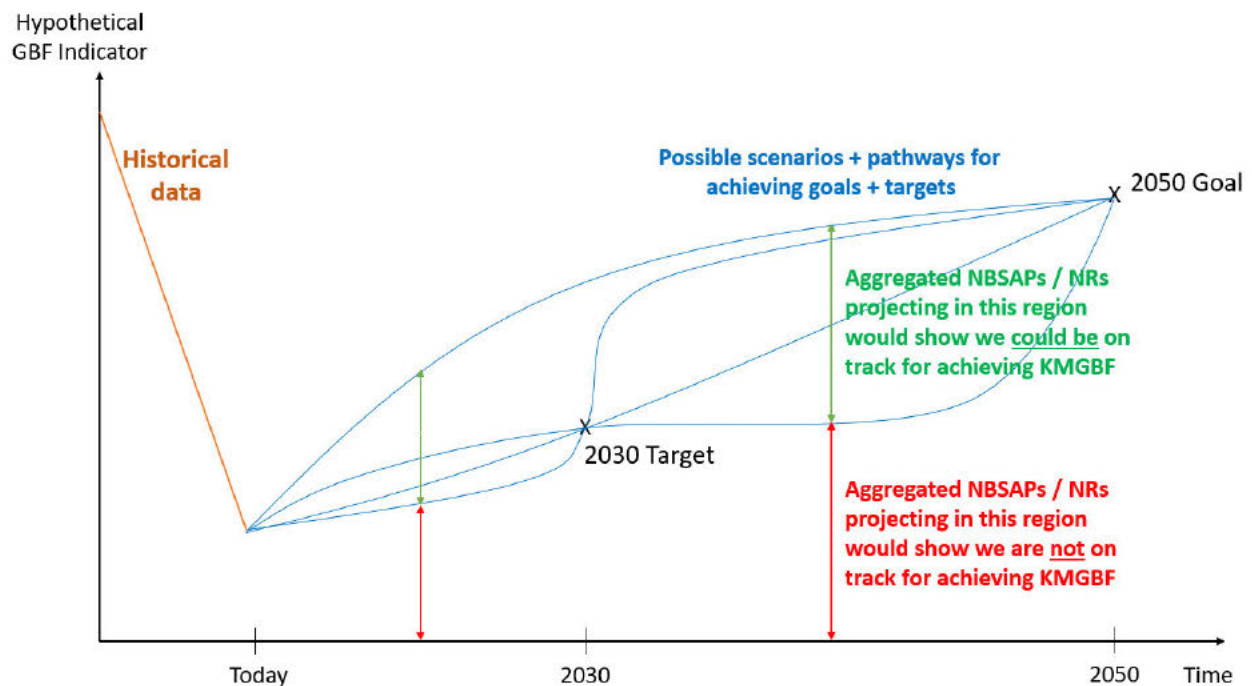
A global review of collective progress in implementing the KMGBF will take place at CBD COP17 and at COP19, based on information from national reports, which will be aggregated based on advice from the Ad Hoc Technical Expert Group (AHTEG) on indicators. The AHTEG is an expert group composed of 45 experts, 30 nominated by Parties and 15 by Observers, established for the period to COP16 to provide technical advice and guidance on the monitoring framework.

The aggregation of information from National Reports will indicate progress made in implementing the KMGBF to date ('where we are now') while the aggregation of information from NBSAPs will help to project future progress should the commitments contained within be fully implemented ('where current commitments take us'). However, these will not align neatly with the 2030 and 2050 milestones of the targets and goals, respectively, given the likely lack of alignment between those and national strategies and plans (e.g., different timelines, country-level commitments). They will also likely present an incomplete picture in terms of biodiversity-related policy, and



projections of the future will also be inherently uncertain because of the changing drivers of biodiversity loss, socio-economic factors, global shocks, and uncertainties in baseline biodiversity monitoring.

The international community requires a clear understanding of feasible pathways for achieving the goals and targets of the KMGBF, if current commitments put us 'on track' for such pathways, and if they do not, how much global ambition needs to be strengthened to do so. As such, we will need scenarios and pathways to inform us of 'where we need to be' at various time points in order to achieve the ultimate end goal (Figure 1).



**Figure 1:** Schematic of timeline of goals and targets, and timing of NBSAPs and national reports (NRs), and the gap that scenarios and pathways could fill in achieving goals/targets.

## b) Models and scenarios

The development of models and scenarios can contribute significantly to policy decision-making.<sup>ii</sup> Models are used to quantify the impacts of different scenarios on biodiversity and ecosystem services. They can use projections from general circulation models (GCMs) looking at physical change, for example in climate and land use, as well as integrated assessment models (IAMs) that link societal, technological, and economic scenarios with the biosphere and atmosphere into one modelling framework. IAMs (e.g., PAGE, FUND, and DICE) are used extensively in climate science to provide policy-relevant insights into global environmental change and sustainable development issues and to assess the interaction between socioeconomic, energy, and climate systems. For the biodiversity-economy nexus, Earth-Economy models combine macro-economic models with models of ecosystem services to capture the complex interactions between the planetary ecosystem and the global economy. These models are classified as Spatial Ecosystem Services (SES) models (e.g., GLOBIO, INVEST) or Computable General Equilibrium (CGE) models (e.g., GTAP, IEEM). Different types of models can also be used to address various ecological and conservation questions, for example Species Distribution Models (SDMs) and ecosystem models (e.g., biophysical models such as Dynamic Global Vegetation Models or those that also include socioeconomic aspects e.g., Ecopath with Ecosim model). These are often used in combination to assess the complex interactions between multiple factors affecting biodiversity, including climate change, habitat loss, invasive species, and more.



Biodiversity model intercomparisons compare and evaluate different biodiversity models to understand their strengths, weaknesses, and performance under various scenarios. Model intercomparisons bring together different communities of practice for comparable and complementary modelling. Multi-model Intercomparison Projects (MIPs) aim to promote collaboration among researchers, improve model accuracy, and enhance our ability to predict and manage biodiversity impacts in a changing world.

Scenarios and models can integrate a broad set of the social-ecological systems and key feedback mechanisms that are of relevance and importance to biodiversity conservation, climate mitigation and human wellbeing. Different types of scenarios can play an important role in shaping policy, from its design to its implementation and review. In the context of the KMGBF, models can play a crucial role in providing a systematic and evidence-based approach to achievement and monitoring progress. Models can be used to generate pathways that detail the steps required to reach the KMGBF targets and goals, including the likely effects of implementing different policies and measures at different times. The modelled impacts can provide a structured framework to help translate the KMGBF's overarching goals and targets into actionable plans, helping policymakers, conservationists, and stakeholders understand the implications of different policy choices, and adapt strategies. The KMGBF monitoring framework includes agreed indicators that should be used as parameters to understand the impacts of these measures.

At a global level, the information produced by this work will be needed to inform the global collective review of progress under the CBD (see CBD Decision 15/6) as well as for negotiating the post-2030 biodiversity framework - to inform the level of ambition needed in 2040 for tackling the drivers of biodiversity loss and to put us on track for achieving the 2050 goals. This work will also help guide the work of intergovernmental scientific processes; for example, the Global Environmental Outlook (GEO), the Intergovernmental Panel on Climate Change (IPCC) and the Intergovernmental Science-Policy Platform for Biodiversity and Ecosystem Services (IPBES) use scenarios to assess the impact of socio-economic development pathways on land use and climate and their consequences for biodiversity and ecosystem services. At a national level, it will inform biodiversity-related policies (both domestically and overseas), support the preparation of NBSAPs and contribute to decision-making for non-state actors (e.g., corporations, private financial institutions, and NGOs (Non-Governmental Organizations)).

## **2. Aims and Objectives**

The aim of this research is to align and further build on the best available and most appropriate models (biophysical, social, environmental, economic) with the KMGBF to provide clear pathways and insight into the physical, environmental and socio-economic changes that are required to achieve the framework.

This may be achieved through the following objectives:

Design a quantitative modelling approach that assesses existing and anticipated global policies against KMGBF goals and targets in the context of a dynamic global physical, social and economic environment. This can include predictions that take into account direct and indirect drivers of biodiversity loss.

Identify and/or develop scenarios and their respective uncertainties. These scenarios will be based on global policies, commitments and economic/environmental baselines to be simulated in this modelling approach reflecting different evidence about existing and planned policies' effectiveness and the future state of the world.

Establish the current 'gap' for achieving the KMGBF goals and targets. This will identify pathways and drivers to provide predictions of where we will get to and when, and assess their feasibility under these different scenarios.

Identify the types of policy physical, environmental and socio-economic changes that are required to address the 'gap' and achieve multiple global goals/targets simultaneously.

Identify synergies and trade-offs between individual KMGBF targets and with other frameworks, including the Paris Agreement and the Sustainable Development Goals.

Anticipated outcomes of the project include:

**Improved understanding of different pathways for achieving the goals and targets of the KMGBF** and the drivers behind them, using models to answer specific policy-relevant research questions.

**A clearer insight into the impacts of future policy decisions** through a better understanding of the most effective interventions, their global/local context, any unintended consequences, and the barriers currently preventing their implementation.

**Accessible knowledge base on biodiversity, ecosystem service and relevant socio-economic modelling** through clearly communicating findings in an engaging and impactful manner, using innovative communication methods such as infographics, as well as by making any models and databases used available to Defra.

**Models that are aligned with KMGBF indicators as well as others of interest (such as Paris Agreement and SDGs)** and can be used to answer policy-relevant questions.

### 3. Outputs/ Deliverables

Deliverable	Output	Outcomes	Due	Notes
<b>Agreed milestones and scope</b>	Project Plan and Scope  Risk Register  GANTT chart	Ensure a robust governance structure is in place to allow for corrective action if required.  Continuous monitoring of the project to refine the scope/address issues.	TBC	Within this submission, the Supplier should identify milestones and agree these with Defra. Progress against milestones will be regularly monitored throughout the contract period.
<b>Media communication strategy</b>	Communication strategy including media approach, timelines and intended audience	Ensure results are communicated with clarity to a range of audiences, including the wider academic community, policymakers and NGOs (if relevant).	TBC	The Supplier should produce different visual and communication media to engage in a wider communication strategy, including but not limited to: infographics, posters, social media content, CBD INF docs <sup>iii</sup> , seminars, a presentation to Defra and x-Government policy

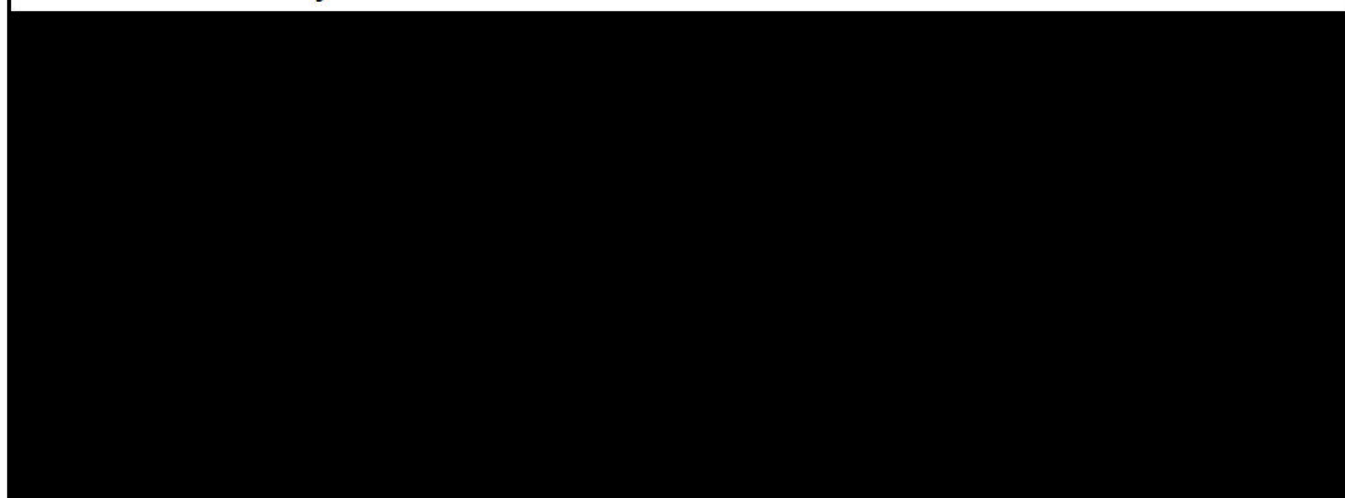
				and evidence teams or CBD events.
<b>Literature and model review</b>	Literature review report including review/mapping of models and their appropriateness for this work	Mapping of current efforts, modelling capabilities, insights and results, gaps and blockers to further development including a feasibility review of existing models (if appropriate model(s) for the project has not been identified)	TBC	
<b>Interim report</b>	<p>Report with approach and any findings to date.</p> <p>Presentation to Defra steering committee and experts with Q&amp;A.</p>	Updated scope and approach to addressing research questions (in light of literature review), including description and rationale for model(s) to be used, quality assurance approach for project lifespan, any findings to-date including a technical section on model results and outputs (including annexed database/GitHub repository).	TBC – submit to Defra one week prior to the interim Steering Committee meeting. The interim report will undergo review and quality assurance by Defra and external peer review before approval.	The Supplier should summarise findings to date and assess progress against milestones for discussion by the Steering Committee. The final report approach and structure should be discussed in this report and the committee meeting.
<b>Final report</b>	<p>Report including a summary for policymakers, a technical summary, including methods and findings, and conclusions.</p> <p>A presentation of the findings to Defra and wider relevant policy teams and experts.</p>	Fulfil the objectives of the project by providing insight into the modelling landscape and analysis of modelling results to answer research questions, including the pathways/scenarios to achieving the KMGBF and current commitment and progress, and the	<p>TBC</p> <p>This deliverable will undergo review and quality assurance by Defra and external peer review before final approval and the Supplier should factor this into their planning and</p>	The Supplier should produce a final report including the results of using models to answer specific policy-relevant research questions. The output should also include a summary of the impacts, synergies, trade-offs and unintended consequences of future policies/trajectories



		<p>policy interventions that are required.</p> <p>Should include a technical-based data publication and annexed database.</p>	<p>timelines (including 2 weeks for review and approval by Defra). Minor (e.g. editorial) changes to the final report can be made past this deadline and within a reasonable timeframe.</p>	<p>and highlight knowledge gaps, limitations of the approached used, future model development needs and next steps for the scientific and the international community to progress this work, including researchers, Governments, non-state actors and international scientific organisations (IPBES, IPCC).</p> <p>Models and data used (with reference to their sources), including code, should be made available in a GitHub repository, following best practice for coding.</p>
<b>Additional outputs</b>	<p>Open-access, peer-reviewed academic publication(s) including methodology, results and conclusions.</p> <p>Media communicate (based on agreed strategy).</p> <p>Teach-in tailored for analysts on the modelling approach.</p>	<p>Provide the results of the project to the larger academic community with the aim to feed this published work in global environmental assessments – with a particular view to providing information for the IPBES 2<sup>nd</sup> Global Assessment)</p>	<p>Following the completion of this commission, preferably ahead of Q2 2026 (i.e., the first external review of the IPBES 2<sup>nd</sup> Global Assessment),</p>	<p>The Supplier should aim to produce open-access journal articles, conference materials or other academic publications to make the results of this work widely available for the scientific and the international community, including researchers, Governments, non-state actors and international scientific organisations (IPBES, IPCC).</p>

				<p>The teach-in should include walk throughs of any code/scripts used (to ensure reproducibility, additionality etc.) and discussion of limitations, knowledge gaps etc.</p>
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### 3.1 Milestones and Payment Schedule



### 3.2. Payment

Payment will be done in 6 (six) stages by invoicing for progress of tasks in line with the above project milestones agreed with the successful bidder following award of the contract.

## **4. Scope and Research Questions**

This section sets out the detail and scope of information and indicative questions to frame the analysis. These questions are not exhaustive, and further questions can be explored based on Supplier expertise and modelling capabilities. The analysis should focus on providing information specific to future scenarios and pathways to reach goals and targets set by the KMGBF and the barriers for achieving them. Possible questions to be addressed fall under two broad categories:

### **4.1. Modelling and pathways:**

Under a range of plausible scenarios, what are the possible pathways and drivers for achieving the KMGBF, and how do the headline indicators change over time under them? Given a range of different scenarios and pathways: What global policies and measures need to be implemented and what timeline is required for their implementation to be effective?

What trajectories in headline (and potentially complementary/component/binary) indicators are consistent with these pathways?

What physical, socio-economic and developmental factors associated with the scenarios affect the impact of those policy measures?

In what ways could external influences, such as action on climate change, help or hinder KMGBF progress?

How does a business-as-usual scenario compare to pathways to meet the targets of the KMGBF?

What are the common features across all pathways for achieving the KMGBF? Where the pathways diverge, how can they be categorized into groups of pathways with common features? What implications does this have for policymaking?

These questions can be addressed independently for each scenario and pathway or grouped by common themes.

#### **4.2. Policies and actions:**

What are the most effective global policies that can contribute to achieving multiple goals/targets simultaneously?

How does the effectiveness of global policies and measures differ in different situations/ecosystems/regions?

How do global policies in different situations/ecosystems/regions impact global progress to achieving the KMGBF?

What are the synergies and trade-offs between GBF targets and other frameworks including the SDGs and Paris Agreement?

What is the contribution of achieving of the KMGBF 2030 goals to reach the 2050 goals??

What implications do all of the above have for the level of ambition required by 2040 to be consistent with achieving the 2050 goals?

The scoping report and development of this work could be informed by the results of two workshops hosted by Defra and the Government Office for Science and held during November 2023. These two workshops brought members of the biodiversity modelling and science-policy community together to discuss the current state of biodiversity modelling efforts and knowledge gaps currently present. Any further limitations and knowledge gaps encountered by the Supplier in the development of this work should be highlighted as this may also inform future work undertaken by Defra.

The supplier should outline workstreams to address the broad range of analyses. Suggested workstreams are outlined below:

**Workstream 1: Modelling landscape.** A review of the current modelling landscape: mapping of current efforts, modelling capabilities, insights and results, gaps and blockers to further development.

**Workstream 2: Modelling and pathways.** Modelling to answer questions under category 1 above - modelling and pathways (e.g., BAU vs future pathways, common features between pathways to achieve the KMGBF)

**Workstream 3: Policies and actions.** Analysis of modelling results to identify policies and actionable information -under category 2 above- on the measure needed to achieve the KMGBF targets and goals (e.g., synergies/tradeoffs, most impactful policies, actionable measures).

**Workstream 4: Communication strategy.** Development of a communication strategy – including communication of findings of the report.

#### **5. Methodology**

The different workstreams can be carried out in parallel and/or sequenced according to the Supplier's knowledge, capability and expertise.

#### **Workstream 1: Modelling landscape.**

In Workstream 1, the primary focus is to conduct a comprehensive mapping and review of the current modelling landscape. This phase involves an examination of existing initiatives, efforts, and capabilities in the field of modelling of systems including biodiversity, ecosystem services and society (e.g. economics, policy) to establish: **1)** efforts underway to build the biodiversity model and scenario landscape; **2)** the strengths, capacity and adaptability of existing models; **3)** key gaps in relation to the applicability to the KMGBF, and options to address these gaps; **4)** insights and results from the current modelling efforts and capabilities. This could also be informed by outcomes from the Defra-held expert workshops described above or through similar previous work or work conducted by the Supplier. Different model types should be analysed, giving consideration to their strengths and limitations for answering policy-relevant questions at a global and regional scale and for the range of disciplines (ecology, social sciences, climate, economics) that are relevant to the diverse goals and targets of the KMGBF, and their applicability for the key realms (marine, terrestrial, freshwater etc.). This mapping will also help pinpoint critical gaps and blockers within the current modelling landscape, to propose recommendations for developing innovative solutions and approaches for future model development. There should be consideration of approaches used in the academic and private sector, and across different regions and institutions. This review should not solely focus on UK modelling efforts. The review can be more detailed if the supplier does not identify an appropriate model early in the project, to help inform selection of appropriate model(s), or less if the inverse is true.

The key outcomes of this review could include a 'map' of the models and scenario landscape and an analysis of the current availability and 'readiness' of existing models to answer the key research questions for the KMGBF (see *section 4*). This could be used to provide recommendations to the modelling community, governments and international community to meet the needs of the KMGBF and for the IPBES Second Global Assessment. This should also inform the main section of this project, to test, adapt and develop existing models to answer the research questions outlined above. An implicit risk of this review is the potential finding that there is not an 'application ready' global model or related methodology that covers the key biophysical and socio-economic aspects of the KMGBF, which is possible given the proven problems with the integration of different models (e.g., ecosystem, economics etc.). If that proves to be the case, the models considered should instead be ranked based on their strengths, and their limitations listed. There should be consideration of the capacity issues and blockers to an 'application ready' global model and an analysis of theoretical and practical gaps in the development of such a model. A literature review and database of such models should be provided as output of this workstream.

Please note that the IPBES Task Force on Scenarios & Models has put out a notification (Reference [EM/2023/47](#)) inviting relevant organizations to conduct workshops to catalyse further work on scenarios and models including on testing and applying the Nature Futures Framework (see below). Suppliers may wish to conduct workshops as part of this workstream. If so, the task force will be available to provide support, for example by providing guidance and information on the work of IPBES with regard to scenarios and models, including the Nature Futures Framework, at such workshops.

## **Workstream 2: Modelling and pathways.**

The Supplier should use model(s) to answer the specific policy-relevant research questions outlined above. The chosen methodology and model(s) could be selected based on the Supplier's expertise or preference, and considerations derived from Workstream 1. The modelling work should focus on the global scale but draw on regional insights where possible, considering the headline indicators that were agreed under the KMGBF and mapping how existing modelled metrics can align with these.

Scenarios used in the modelling should be identified or further developed and should include a business-as-usual scenario to inform the development and analysis of pathways to achieve the KMGBF (including types of environmental impacts and trajectories), defined by the Supplier and agreed with Defra. The Supplier should produce illustrative background scenarios and nature futures to use in the modelling, particularly socio-economic scenarios, that will inform the development of pathways. The development of these scenarios should make use



of existing work such as that of the IPBES Nature Future's Framework<sup>iv</sup> and recent publications that use it including Duran et al. (2023) which details a set of 'illustrative narratives' (or scenarios)<sup>v</sup>, - a set of 'scenario skeletons' and their key variables. The Supplier should also utilize the methodological guidance produced by the IPBES task force on scenarios and models to support the operationalisation of this framework<sup>vi</sup>.

Additional budget may be available if the Supplier wishes to conduct higher-resolution nesting such as of specific regions, to explore regional disparities and different potential contributions to achieving the KMGBF targets. Regional selection criteria can take place through discussions with Defra. However, the main focus of this project should be to identify and develop models and scenarios to inform global implementation of the KMGBF, to better align current modelling efforts with the headline indicators and to establish the evidence base to guide ongoing CBD negotiations and national implementation of the KMGBF.

### **Workstream 3: Policies and actions.**

In Workstream 3, the primary objective is to analyze the modeling results to answer questions on policies and actions, with a focus on identifying the most impactful policies that can contribute to achieving multiple goals and targets simultaneously, and the possible synergies and tradeoffs between KMGBF targets and other frameworks for sustainable development. This phase involves a comprehensive examination of the modeling outcomes identified in Workstream 2 to inform evidence-based decision-making and policy actions. The Supplier will conduct an in-depth analysis of the modeling results to identify: policies and actions that have the most significant potential to contribute to multiple goals and targets within the KMGBF; areas where different policies intersect, complement, or potentially conflict with each other, taking into consideration the intricacies of the KMGBF; the impact of various policies on key metrics and indicators and a quantitative and qualitative assessment of the effectiveness of different policies in achieving these objectives. Throughout the analysis of trade-offs and synergies across the targets, the supplier should consider the implications for cost-effectiveness to inform decision-making and opportunities for sustainable development to address the pressure of economic growth on biodiversity loss. The Supplier should also identify longer-term implications for achievement of the KMGBF where possible – in particular what actions and global levels of ambition would be required in a post-2030 global biodiversity framework (e.g., when considering 2040 targets) in order to remain on track for achieving the 2050 goal.

These high-impact actions for policies should be highlighted and their implications for various sectors and regions should be thoroughly evaluated. While the main focus of this workstream is on a global scale, regional information produced along the way should be presented and analysed, and the Supplier may consider conducting more detailed regional studies if feasible in the budget and timeline. Regional assessments should aim to uncover disparities and contributions to the KMGBF, potentially revealing regional differences that have a disproportionate impact on the global goals (e.g., do certain regions have a much greater capacity for restoration than others; does action need to be taken in some regions earlier than others to be effective?). Based on the analysis, the Supplier should provide clear and actionable information on the measures needed to achieve the KMGBF targets and goals and suggest strategies for optimizing policy implementation to maximize positive outcomes in relation to 2030 and 2050, for targets and goals respectively. The outcomes of this workstream should be included in the interim/final reports and they additionally could be published in peer-reviewed international journals to be made available to the wider community.

### **Workstream 4: Communication strategy.**

The Supplier will produce a report including a summary for policymakers, a technical summary, including methods and findings, and conclusions. The report will summarise considerations from the literature review, model methodology, and the results from the modelling to the global, and potentially regional, scale. The use of diagrams, flow maps, tables, and other visual media to communicate results is encouraged. The results should also summarise clear and actionable information on the measures needed to achieve the KMGBF, on future

policies/trajectories and highlight knowledge gaps, future model development needs and next steps for the scientific and the international community to progress this work.

The primary recipient of this work will be Defra. However, insights gained from this analysis will serve as a valuable resource for governments, international communities, and organizations working towards the effective implementation of policies that advance both biodiversity conservation and sustainable development. Furthermore, this work will form the base for future negotiations, support national implementation efforts, and guide decision-makers in identifying and prioritizing policies that contribute to the overall success of the KMGBF.

Therefore, the supplier should also produce and implement a communication strategy outlining the target audiences, respective objectives, products and timelines that the Supplier, jointly with Defra, will use to ensure that the project creates this broader impact. This will detail the different audiences that Defra should be targeted as a priority (e.g., CBD Parties and Secretariat; IPBES; academic community); the rationale and objectives for influencing them with this work and, where possible, key contacts; the most suitable comms media (e.g, Defra comms channels, Supplier's channels, open access publications, opinion pieces and biodiversity-relevant websites or scientific platforms); as well as a list of key events (e.g., conferences, meetings) and dates at which to do so. The Supplier will outline how they will use the levers at their disposal to do so and strategise with Defra where internal Defra networks are more appropriate to reach specific audiences. The Supplier will produce, update and implement suitable media material to ensure that the results of this work are widespread and reach the most relevant audiences, which could include: infographics, posters, social media content to be shared on Defra's and/or the Supplier's channels, CBD INF docs, seminars, Defra or CBD events, as well as academic publications or scientific outputs.

## **6. Timelines**

Subject to procurement and agreement with the Supplier, the contract is expected to go live in January 2024 and have a duration of 16 months. The interim report should be delivered to Defra one week in advance of the midway Steering Committee meeting. Final deliverables should be completed by March 2025, including review of the report and the time for Defra to carry out its quality assurance (at least 2 weeks). The supplier may implement any outstanding or additional outputs from this work, such as peer-reviewed publications and/or opinion pieces previously agreed with Defra, after March 2025 but no further budget will be available beyond this date.

## **7. Reporting requirements**

Following consideration of this Specification of requirements, the Supplier will return an initial proposal setting out how they meet the relevant criteria and requirements to carry out this analysis, and details of the methodology they will use to conduct the analysis and meet the outcomes outlined before. Defra are open to having discussions with the Supplier about how outputs can be delivered and the sequencing of those, as well as how the scope could be tweaked to capitalise on the expertise of the Supplier where they complement or enhance the objectives.

Following confirmation and signature of contract, details of outputs and expected timelines will be confirmed.

The Supplier should designate a key point of contact, who will attend monthly meetings with the Defra contract manager to discuss progress, arising issues, and agree risk mitigation measures. At each meeting the project risk register will be discussed, and the Supplier is expected to provide an update of the risk register at least 1 working day prior to project management meetings.

At a minimum, the Steering Committee will meet every 3 months, including at project kick-off, midway through the project, and at project close-out. They will evaluate outputs and contribute to the quality assurance process

for the interim and final report. More regular meetings will be arranged between the Supplier and the project officers assigned to the project.

## **8. Potential risks**

*Timeline:* This project will be funded until the end of financial year 2025. Given the breath of the project, potential delivery risks might arise from the limited timeframe.

*Research:* potential problems surround the limited availability of models; the challenges surrounding achieving better integration of different models; and the model capacity and readiness.

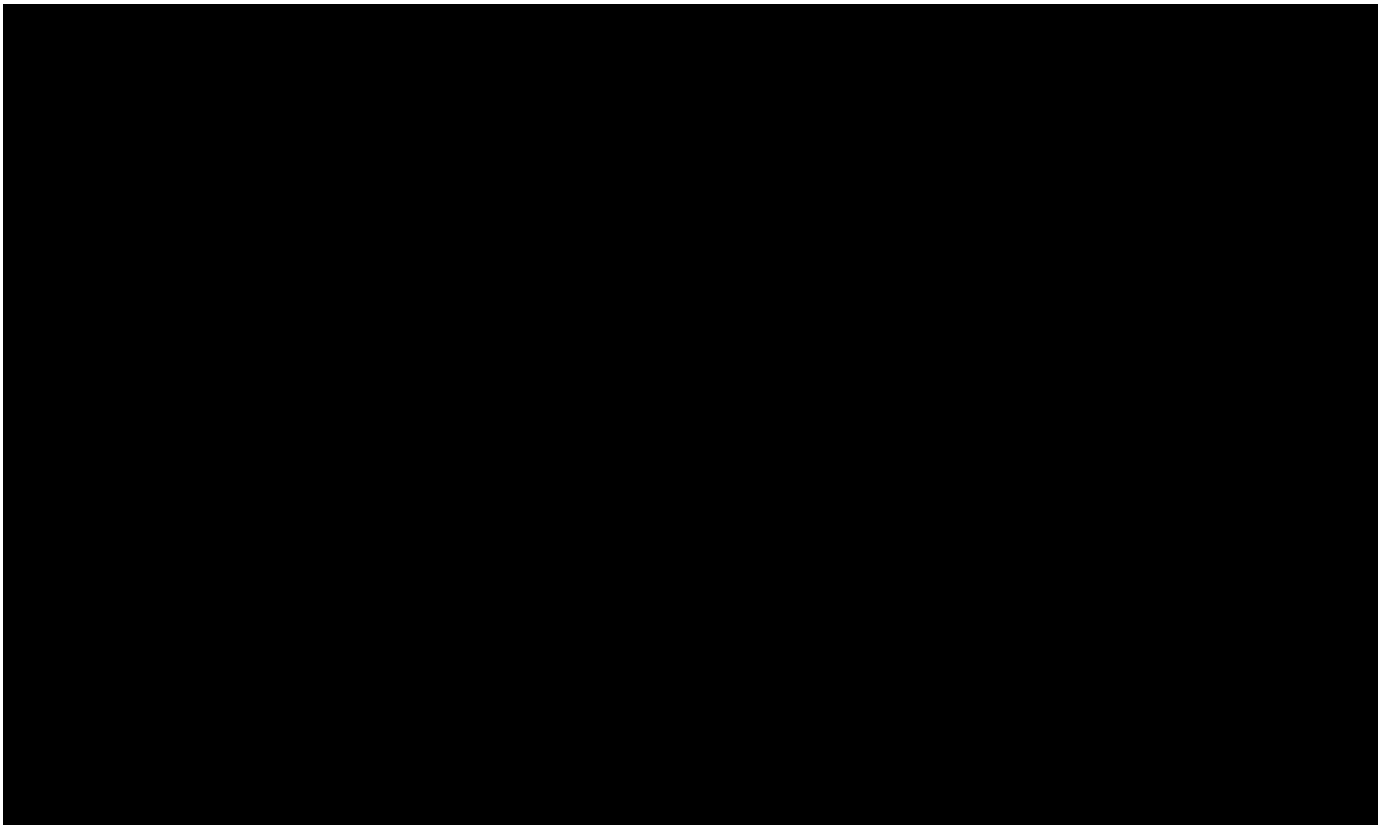
*Reputational:* this work is likely to be low risk. Possible reputational concerns could arise from the comparison of domestic policies with global pathways. However, the research is unlikely to receive significant media attention, and will not explore UK-specific pathways, mitigating this risk.

The Supplier will be asked to outline any key or additional risks and proposed ways to mitigate these in the two weeks following project kick-off.

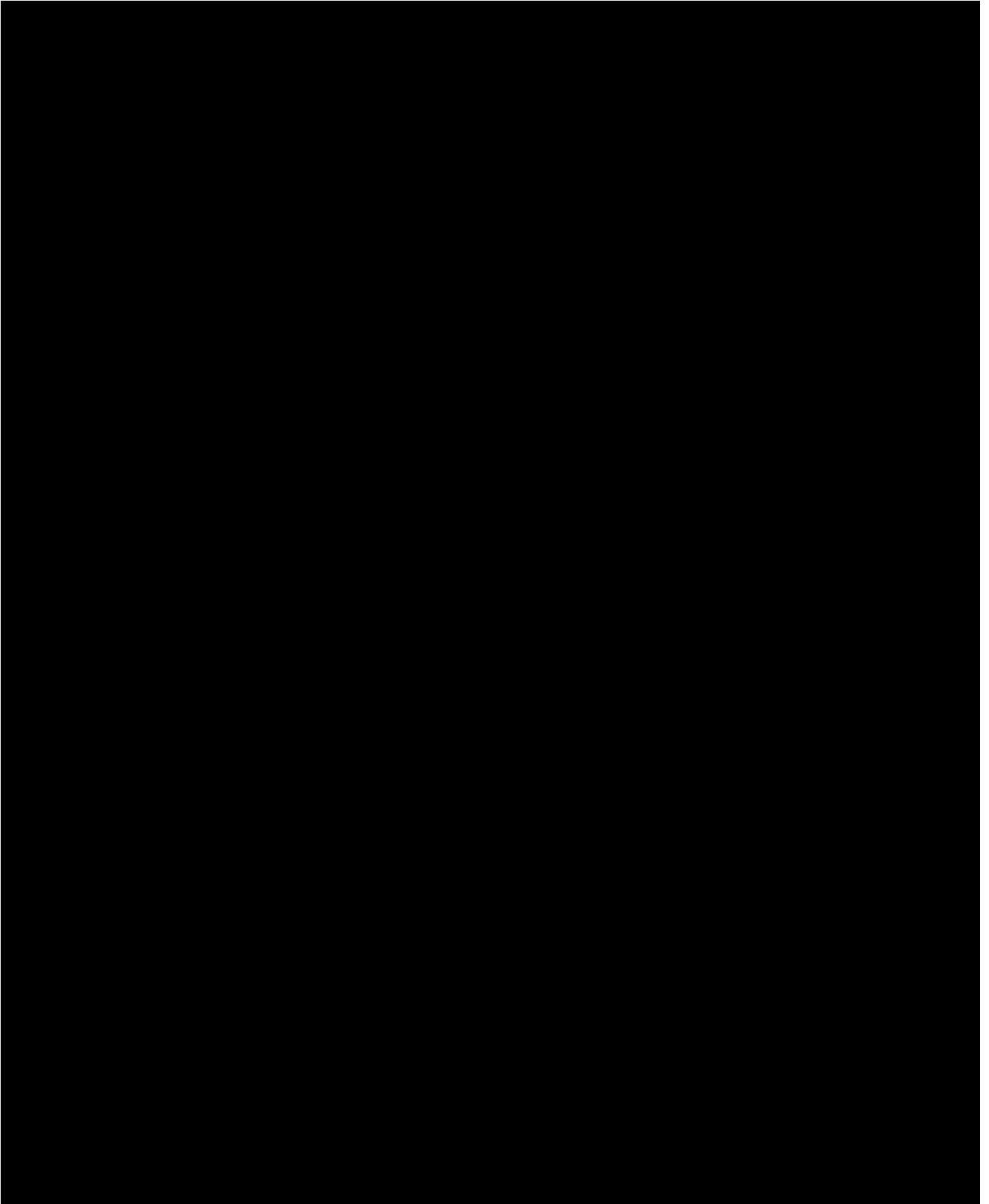
### **Appendix 3: Charges**



2. The Authority shall pay all sums due to the Supplier within 30 days of receipt of a valid invoice.
3. The invoice must include a valid purchase order number (PO Number) and the details (name and telephone number) of your customer contact (i.e. Contract Manager).
4. To avoid delay in payment it is important that the Supplier submit a complaint invoice. Any non-compliant invoices received will be returned to the Supplier, which may lead to a delay in payment
5. The Authority is liable to the Supplier only for their respective payment in accordance with this schedule.
6. Any overpayment to the Contractor made by the Authority, whether of Project price or of VAT, shall be a sum of money recoverable by the Authority from the Contractor.



#### **Appendix 4: Supplier Submission**



the 1990s, the incidence of *S. flexneri* has increased in the United Kingdom [10]. In the United States, *S. flexneri* has been reported to be the most common serotype of *Shigella* isolated from children with shigellosis [11].

There is a paucity of data on the epidemiology of *S. flexneri* in the United Kingdom. In the 1970s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [12]. In the 1980s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [13].

In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [14]. In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [15].

In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [16]. In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [17].

In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [18]. In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [19].

In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [20]. In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [21].

In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [22]. In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [23].

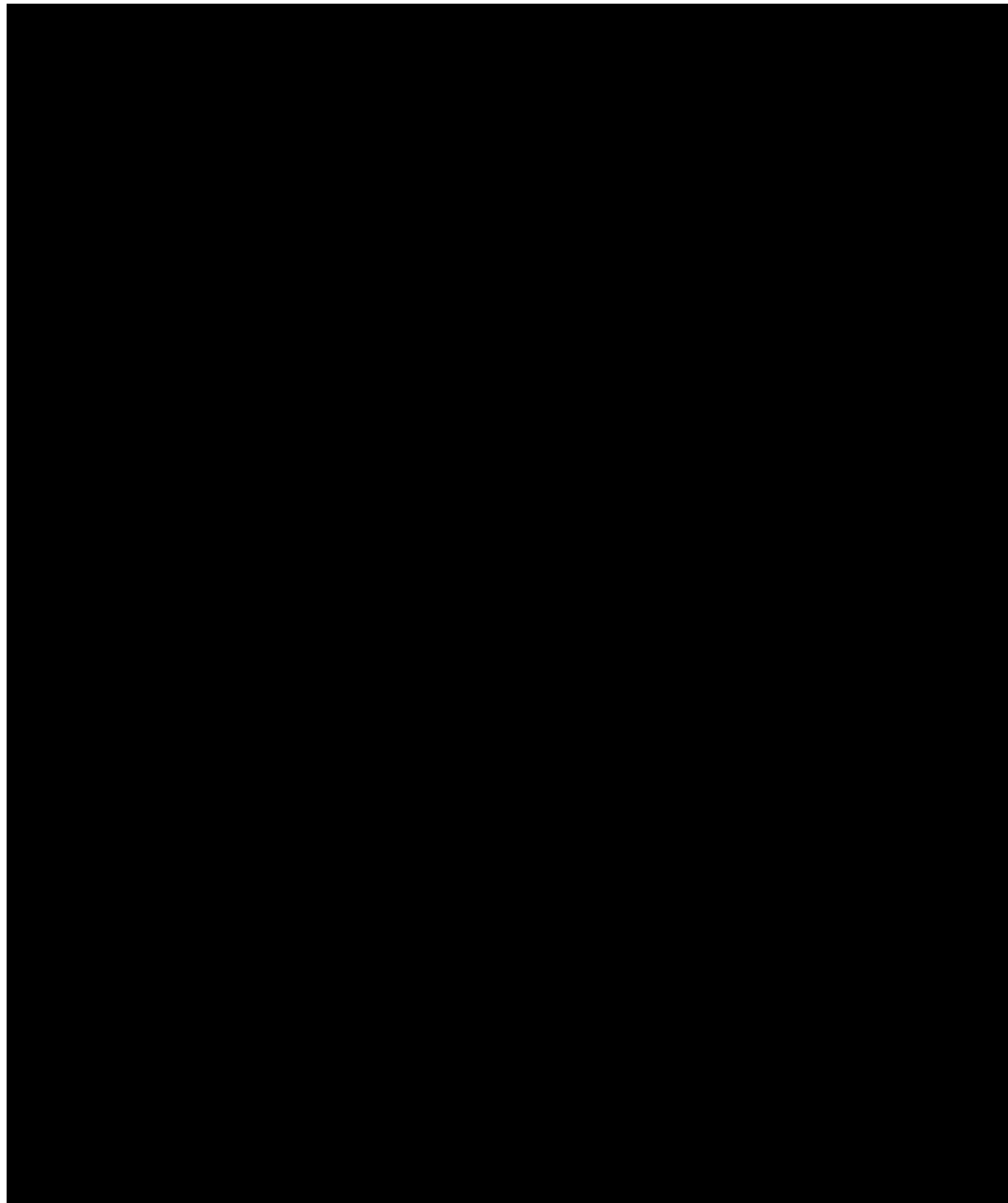
In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [24]. In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [25].

In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [26]. In the 1990s, *S. flexneri* was the most common serotype of *Shigella* isolated from children with shigellosis in the United Kingdom [27].



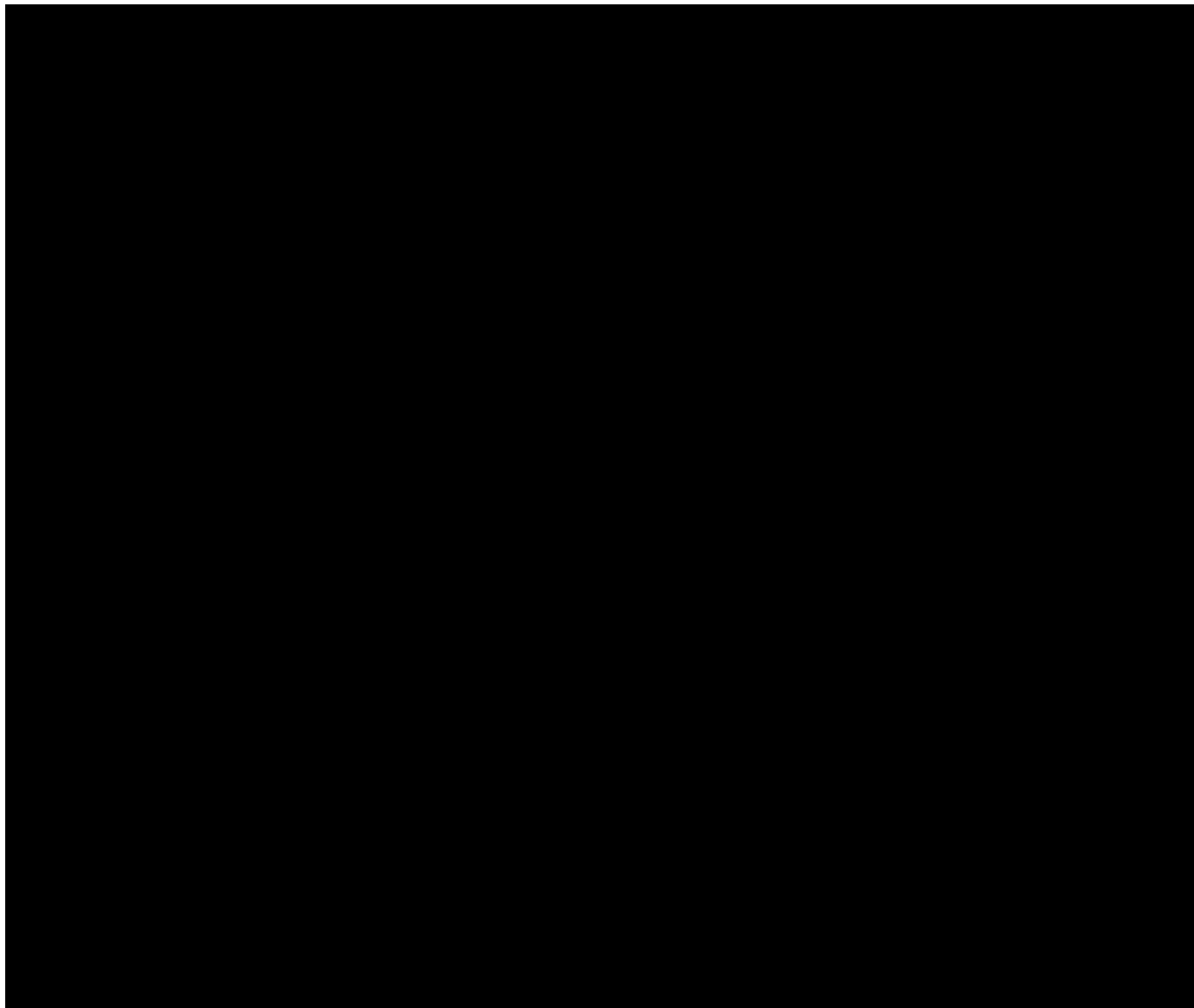




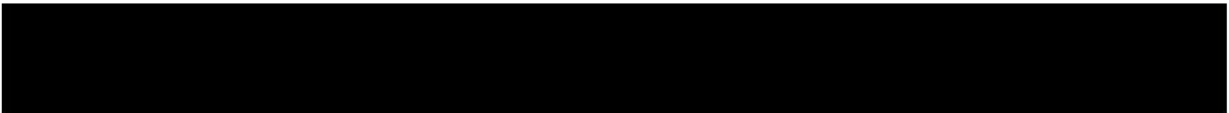




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## **Appendix 5: Processing Personal Data**

1. This Schedule shall be completed by the Authority, who may take account of the view of the Contractor, however the final decision as to the content of this Schedule shall be with the Authority at its absolute discretion.
2. The contact details of the Authority Data Protection Officer are:  
[Dgc.gdpr@defra.gov.uk](mailto:Dgc.gdpr@defra.gov.uk)  
Nobel House, 17 Smith Square, London. SW1P 3JR
3. 
4. The Contractor shall comply with any further written instructions with respect to processing by the Authority.
5. Any such further instructions shall be incorporated into this Schedule.

Data Processing descriptor	Narrative
Identity of the Controller and Processor	The Parties acknowledge that for the purposes of the Data Protection Legislation, the Authority is the Controller and the Contractor is the Processor in accordance with Clause 15.
Subject matter of the processing	<i>The processing is needed in order to ensure that the Processor can effectively deliver the contract to provide a series of key stakeholder workshops</i>
Duration of the processing	Processing will take place for the duration of the contract: 01/03/2023 to 31/03/2025. Data will be retained for the statutory minimum required by the contract, i.e., six years. Scientific research data will be retained indefinitely in order to be available to the research community.
Nature and purposes of the processing	<i>The nature of the processing means any operation such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction of data (whether or not by automated means)</i>
Type of Personal Data	<i>May include: name, address, telephone number, images</i>
Categories of Data Subject	<i>Volunteer stakeholders, staff, consultants</i>

<p><b>Plan for return and destruction of the data once the processing is complete</b></p> <p><b>UNLESS requirement under union or member state law to preserve that type of data</b></p>	<p>Collected data will be retained for the statutory minimum of 6 years, unless the data are needed for scientific research purposes, in which case those will be held indefinitely. Where appropriate the latter will be anonymised. All data to be destroyed will be deleted from the Contractor's computer system i.e., emails, servers and back-ups.</p>
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## **Appendix 6: Performance Management Framework**

### **1. Overview of the PMF**

- 1.1. As part of the Authority's continuous drive to improve the performance of all Contractors, this PMF will be used to monitor, measure, and control all aspects of the Supplier's performance of contract responsibilities should they be awarded following mini competitions.
- 1.2. The PMF purpose is to set out the obligations on the successful Contractor, to outline how the successful Contractor's performance will be monitored, evaluated, and rectified for performance.
- 1.3. The Authority may define any reasonable performance management indicators for the Contractor under the following categories:
  - Updates to Authority
  - Data Handling
  - Participatory Outputs
  - Reports
  - Presentations
- 1.4. The above categories are consistent with all Contract awards allowing the Authority to monitor Contractor' performance at both individual level and at the enterprise level with the individual Contractor.

### **2. Management of the PMF**

- 2.1. Key Performance Indicators (KPI's) shall be monitored on a regular basis and shall form part of the contract performance review. Performance of KPI's will be reported by the Contractor to the Authority on monthly basis. The Contractor shall detail performance against KPI's in Monthly Reports and at quarterly Contract Meetings with the Authority, who will review this and make comments if any.
- 2.2. The Contractor shall maintain their own management reports, including a Risk and Issues Log and present these as requested by the Authority at any meeting requested by the Authority.
- 2.3. Any performance issues highlighted in these reports will be addressed by the Contractor, who shall be required to provide an improvement plan ("Remediation Plan") to address all issues highlighted within a week of the Authority request.
- 2.4. Key Performance Indicators (KPIs) are essential to align Contractor's performance with the requirements of the Authority and to do so in a fair and practical way. KPIs must be realistic and achievable; they also must be met otherwise indicating that the service is failing to deliver. The successful Contractor will ensure that failure and non-performance is quickly rectified.
- 2.5. The Authority reserves the right to amend the existing KPI's detailed in appendix 7 below or add any new KPI's. Any changes to the KPI's shall be confirmed by way of a Contract Change Note.

## **Appendix 7: Key Performance Indicators**

KPI and deliverables	Measurement	Fail	Acceptable
<b>1. Updates to Authority</b>	Regular, and ad hoc, verbal, and written updates summarising progress and challenges	Updates are infrequent or lacking enough detail to assure the Authority of progress	Updates are timely and include enough detail to assure the Authority of progress
<b>2. Data handling</b>	Secure, accessible, and organised collecting and storage of data/information relating to the project	Data, information, and files are not kept up-to-date and are unavailable	All project data and information are up-to-date and accessible to the Authority
a. Evidence synthesis	Collection and storage of external and internal evidence sources, as well as any annotations / analysis	Evidence is only cited and not made available to the Authority	Evidence is gathered, stored and accessible to the Authority.
b. Evaluation questions	Proportionate collection and secure storage of key informant views and secondary data underpinning evaluation questions	Inadequate range of views and information accessed and not stored	Key stakeholders consulted and their views and other information are gathered and stored securely.
c. Baselines and data collection plan	Collection and storage of data used to develop and test counterfactuals and baselines	Data is inadequate to achieve deliverable	Data is adequate and available to the Authority.
<b>3. Reports</b>	Draft iterations and final reports, including comment logs and requested changes	Reports are late, incomplete and do not adequately address feedback from the Authority or deliverables	Reports are on time, complete, incorporate comments and address all deliverables
<b>4. Presentations</b>	Presentation materials and delivery of key findings	Presentations do not take place	Presentations take place and convey key findings clearly
<b>5. External communication</b>	All external comms material is targeted to key stakeholders following the Authority's standards	External comms is not delivered and/or in infringement of the Authority's standards and rules of conduct.	External comms (e.g., social media, editorial pieces, graphs) are delivered to maximise stakeholder engagement.

## **Appendix 8 - NON-DISCLOSURE AGREEMENT**

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**THIS NON-DISCLOSURE AGREEMENT** is made the 10<sup>th</sup> of June 2024 (the "Commencement Date")

**BETWEEN:**

WCMC (the "Contractor");

**and**

WCMC (the "Disclosee").  
(each a "Party" and together the "Parties").

**WHEREAS:**

- (a) The Contractor has contracted with the Secretary of State for Environment, Food and Rural Affairs on behalf of DEFRA (the "Authority") to provide goods and/or services to the Authority in an agreement dated 31 May 2024 (the "Contract").
- (b) The Contract places an obligation of confidentiality on the Contractor. The Disclosee is an employee of the Contractor engaged in the provision of certain goods and/or services to the Authority in support of or in connection with the goods and/or services to be provided by the Contractor under the Contract.
- (c) The Disclosee may therefore, have communicated to it, certain Confidential Information belonging to the Authority which is proprietary and must be held in confidence. Accordingly, the Contract requires the Contractor to ensure that the Disclosee enters into a non-disclosure agreement with the Contractor on the terms set out herein.
- (d) Any Confidential Information disclosed by the Authority or the Contractor to the Disclosee, whether contained in original or copy documents, will at all times remain the property of the Authority together with all notes, memoranda and drawings that have been made as a result of access to such Confidential Information.

**NOW IT IS AGREED as follows:**

Definition and Interpretation

- 1. In this Agreement:
  - a) "Confidential Information" means: any information which has been designated as confidential by the Authority in writing or that ought to be considered as confidential (however it is conveyed or on whatever media it is stored) whether commercial, financial, technical or otherwise including (without limitation) information belonging to or in respect of the Authority which relates to research, development, trade secrets, formulae, processes, designs, specifications, the Authority data, internal management, information technology and infrastructure and requirements, price lists and lists of, and information about, customers and employees, all materials and information belonging to third parties in respect of which the Disclosee owes obligations of confidence; information the disclosure of which would, or would be likely to, prejudice the commercial interests of any person, intellectual property rights or know-how of the Authority and all personal data within the meaning of the General Data Protection Regulation (Regulation (EU) 2016/679); whether or not that information is marked or designated as confidential or proprietary; whether arising prior to, on or after the Commencement Date;

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- b) "Law" means any applicable Act of Parliament, subordinate legislation within the meaning of Section 21(1) of the Interpretation Act 1978, exercise of the royal prerogative, enforceable community right within the meaning of Section 2 of the European Communities Act 1972, regulatory policy, guidance or industry code, judgment of a relevant court of law, or directives or requirements of any regulatory body of which the Contractor is bound to comply.
2. In construing this Agreement the general words introduced or followed by the word include(s) or including or in particular shall not be given a restrictive meaning because they are followed or preceded (as the case may be) by particular examples intended to fall within the meaning of the general words.
3. Unless the context requires otherwise, the singular shall include the plural and vice versa, and the masculine shall include the feminine and vice versa.
4. Reference to any legislative and statutory requirement or similar instrument shall be deemed to include reference to any subsequent amendment to them.
5. References to any person shall, as the context may require, be construed as a reference to any individual, firm, company, corporation, government department, agency, or any association or partnership (whether or not having a separate legal personality).

## **CONFIDENTIALITY**

6. The Disclosee undertakes to: keep confidential all Confidential Information and safeguard it accordingly; and that any Confidential Information supplied will not be used by it for any purpose other than in connection with the Contractor's delivery of the goods and/or services under the Contract without the prior written permission of the Authority.
7. The Disclosee will take all necessary precautions to ensure that the Confidential Information is held in confidence and will provide proper and secure storage for all information and any papers, drawings or other materials which relate to or are compiled from such information.
8. The Disclosee shall, with respect to any Confidential Information it receives directly from or on behalf of the Authority or from the Contractor, comply, with all instructions and/or guidelines produced and supplied by or on behalf of the Authority from time to time for the handling and storage of Confidential Information, generally or for specific items.
9. The Disclosee will not disclose any Confidential Information or any part thereof to any third party.
10. Where the Disclosee is an employee, breach of the obligations set out herein in this Agreement shall be a cause of disciplinary proceedings, and the Contractor shall institute and enforce such disciplinary proceedings as against the Disclosee in relation to such breach.
11. Where the Disclosee is a professional advisor or consultant, breach of the obligation set out herein shall entitle the Contractor to terminate the contract of engagement with the Disclosee immediately, and the Contractor shall enforce such right of termination as against the Disclosee in relation to such breach.
12. All Confidential Information in tangible form received hereunder together with all copies thereof shall be destroyed or returned immediately to the Contractor or where so required by the Authority and notified to the Disclosee, to the Authority, upon request or upon completion of the task for the purposes of which such Confidential Information was released.
13. The Confidential Information will not be used by the Disclosee for any purpose or in any way other than under this Agreement.
14. The following circumstances shall not constitute a breach of the obligations of confidentiality contained in this Agreement:
- 14.1 Disclosure of Confidential Information by the Disclosee when required to do so by Law or pursuant to the rules or any order having the force of Law of any court, of competent jurisdiction;
- 14.2 Disclosure of Confidential Information by the Disclosee where and to the extent that the Confidential Information has, except as a result of breach of confidentiality, become publicly available or generally known to the public at the time of such disclosure;
- 14.3 Disclosure of Confidential Information by the Disclosee where and to the extent that the Confidential Information is already lawfully in the possession of a recipient or lawfully known to it prior to such disclosure;
- 14.4 Possession of Confidential Information by the Disclosee where it has been acquired from a third party who is not in breach of any obligation of confidence in providing that Confidential Information;

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- provided that, in no event shall information relating to the affairs of any identifiable person be disclosed or released from the obligations herein without the prior written consent of the Authority.
15. The Disclosee shall: notify the Contractor and the Authority promptly of the date and circumstances of the loss or unauthorised disclosure, if any, of the Confidential Information or any part of the Confidential Information and in addition, the action being taken to rectify that loss or unauthorised disclosure.
  16. The obligations contained in this Agreement shall continue until notified in writing by the Authority or the Confidential Information becomes public knowledge (other than by breach of the terms of this Agreement).
  17. No licence of any intellectual property rights (including but not limited to patent rights, copyrights, trademarks and rights in proprietary information and/or know-how and whether registrable or unregistrable) is granted hereby, beyond that necessary to enable use of the Confidential Information for the purpose for which the Confidential Information was released.
  18. Nothing in this Agreement shall be construed as compelling any of the Parties to disclose any Confidential Information or to enter into any further contractual relationship with any other party.
  19. No representation or warranties are given regarding the accuracy, completeness or freedom from defects of the Confidential Information or with respect to infringement of any rights including intellectual property rights of others.
  20. Without affecting any other rights or remedies that the other Parties may have, the Disclosee acknowledges and agrees that damages alone would not be an adequate remedy for any breach of any of the provisions of this Agreement.

## **GENERAL**

21. No failure or delay by any Party to this Agreement in exercising any of its rights hereunder shall operate as a waiver of such rights, nor shall any single or partial exercise preclude any further exercise of such rights. Any waiver by a Party of any breach or non-compliance with any term of this Agreement shall not constitute a waiver of any subsequent breach of non-compliance with the same or any other term of this Agreement.
22. No Party may assign this Agreement or any of its rights and obligations hereunder without the prior written consent of the Authority.
23. Any notice under this Agreement shall be in writing and shall be delivered by post, fax or e-mail to the address of the Party in question set out at the beginning of this Agreement or such other address (or e-mail address or fax number) as the Parties may notify one another from time to time.
24. No term of this Agreement shall be enforceable, by virtue of the Contracts (Rights of Third Parties) Act 1999, by any person who is not a party to this Agreement other than the Authority. The Parties shall only with the prior written consent of the Authority be entitled to vary any of the provisions of this Agreement without notifying or seeking the consent of any third party and the rights conferred by section 2 of the Contracts (Rights of Third Parties) Act 1999 are excluded.
25. This Agreement shall be governed by and shall be interpreted in accordance with the laws of England.
26. The courts of England have exclusive jurisdiction to settle any disputes which may arise out of or in connection with this Agreement and accordingly that any proceedings, suit or action arising out of or in connection therewith shall be brought in such courts.

