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**Standard Contract for Goods and/or Services - Order Form**

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| --- | --- | --- |
| 1. **Purchase Order Number** | Not Known | |
| 1. **Customer** | Natural England | |
| 1. **Contractor(s)** | Not known | |
| 1. **Defra Group Members** | The following Defra Group members will receive the benefit of the Deliverables: Natural England, Defra, Environment Agency | |
| 1. **The Agreement** | This Order is part of the Agreement and is subject to the terms and conditions referenced at Appendix 1 and shall come into effect on the Start Date.  Unless the context otherwise requires, capitalised expressions used in this Order have the same meanings as in the terms and conditions.  The following documents are incorporated into the Agreement. If there is any conflict, the following order of precedence applies (in descending order):   1. this Order; 2. the terms and conditions at Appendix 1; and 3. the remaining Appendices (if any) in equal order of precedence. | |
| 1. **Deliverables** | **Applicable Deliverables** | **Goods Only:**  **Services Only:**  **Good and Services:** |
| **Goods** |  |
| **Services** | Description: To carry out the services as set out in Appendix 2 – Specification / Description  Date(s) of Delivery: from 29th November 2024 to 31st March 2025  Work activities to performed to contractor’s discretion. |
| 1. **Start Date** | *29th November 2024* | |
| 1. **Expiry Date** | *31st March 2025* | |
| 1. **Charges** | The Charges for the Goods and/or Services shall be as set out in Appendix 3 – Charges. The Charges are fixed for the duration of the Agreement. | |
| 1. **Payment** | Payments will be made to the successful contractor, with payments being made in pounds by BACS transfer using the details provided by the supplier on submission of a compliant invoice. | |
| 1. **Contractor’s Liability Cap (Clause 13.2.1)** | A sum equal to £59,998,80. | |
| 1. **Customer’s Authorised Representative(s)** | For general liaison your contact will continue to be  Dr Matthew Shepherd, [matthew.j.shepherd@naturalengland.org.uk](mailto:matthew.j.shepherd@naturalengland.org.uk)  And/or, in their absence  Jonathan Griffiths, [Jonathan.Griffiths@naturalengland.org.uk](mailto:Jonathan.Griffiths@naturalengland.org.uk) | |
| 1. **Contractor’s Authorised Representative** | For general liaison your contact will continue to be  [**Insert *contract manager name and contact details***]  or, in their absence,  [**Insert *secondary name and contact details***]. | |
| 1. **Optional Intellectual Property Rights (“IPR”) Clauses** | The Customer has chosen Option **B in respect of intellectual property rights provisions for the Agreement as set out in the terms and conditions.** | |
| 1. **Progress Meetings and Progress Reports** | The Contractor shall attend progress meetings with the Customer every month from November 2024 to March 2025. | |
| 1. **Address for notices** | |  |  | | --- | --- | | **Customer: Natural England** | **Contractor:** | | Sterling House  Dixs Field  Exeter  EX1 1QA  Attention: Dr Matthew Shepherd  And  Jonathan Griffiths  Email: [Matthew.j.shepherd@naturalengland.org.uk](mailto:Matthew.j.shepherd@naturalengland.org.uk)  And  [Jonathan.Griffiths@naturalengland.org.uk](mailto:Jonathan.Griffiths@naturalengland.org.uk) | [**insert *name and address of Contractor*]**  Attention: **[insert *title***]  Email: [**insert *email address*** | | |
| 1. **Key Personnel of the Contractor** | |  |  |  | | --- | --- | --- | | **Key Personnel Role:** | **Key Personnel Name:** | **Contact Details:** | |  |  |  | |  |  |  | | |
| 1. **Procedures and Policies** | The Customer’s health and safety policy including appropriate Risk Assessments and Method Statements (RAMS) for both fieldwork and laboratory elements of project delivery. | |
| 1. **Special Terms** | ***NA*** | |
| 1. **Additional Insurance** | ***NA*** | |
| 1. **Further Data Protection Provisions** | The further data protection provisions contained within Annex 4 of the terms and conditions are applicable to this Agreement where indicated below:  **Yes:**  **No:** | |

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| --- | --- |
| Signed for and on behalf of the **Customer** | Signed for and on behalf of the **Contractor** |
| Name:  [**Insert** name]  [**Insert** job title] | Name:  [**Insert** name]  [**Insert** job title] |
| Date: | Date: |
| Signature: | Signature: |

**Appendix 1: Terms and Conditions**

The Customer’s Standard Good & Services Terms and Conditions which can be located on the [Natural England Website](https://eur05.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.gov.uk%2Fgovernment%2Forganisations%2Fnatural-england%2Fabout%2Fprocurement&data=05%7C01%7Cdaniel.lavender%40dlapiper.com%7Ce61b389c5e15470f278e08dbcc060e37%7Ce855e7acc54640d299f7a100522010f9%7C1%7C0%7C638328098969691096%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=ymInFtzabvMF3T9or361i03D%2B4kyuzgt8T5CzJeS7Gc%3D&reserved=0) and which are called ‘Standard Goods & Services Terms and Conditions’

**Appendix 2: Specification/Description**

**Rationale and Background**

Soil health refers to an integrated measure of how well soils function to deliver the services best suited to them. One area where there is an evidence gap is in understanding the extent to which soils are exposed to agricultural pesticides and other biologically active contaminants, and the impact that such chemicals have on soil ecosystem processes. As part of the government’s Natural Capital and Ecosystems Assessment programme, Natural England is an extensive soil sample collection programme under the England Ecosystem Survey. The ambition is to, every 5 years, collect 4-6 bulked samples from 16m by 16m soil plots, and analyse these for a range of physical, chemical and biological properties.

One of the biological assessments applied in the programme is metabarcoding of 16SrRNA and ITS genes to provide a profile of the microbial community at each of these plots. There is much evidence that soil microbial communities change in response to exposure to pesticides, either disadvantaging certain taxa, or promoting the abundance of others which benefit from using the chemical as a substrate, or from elimination of competitor taxa. Indeed, some studies show that certain taxa are almost exclusively indicative of application of particular pesticides. Furthermore, the microbial community has the capacity to integrate, over time, the impacts of regular applications of one or more pesticides (as is becoming increasingly common practice), resulting in a longer-term detectable signal of the applications. Finally, if we can link application of pesticides to changes in the abundance of microbial taxa, we may be able to identify the functional roles of these taxa in delivering specific ecosystem services (e.g. nitrogen fixation, ammonia oxidation, methanotrophy etc.), and thereby begin to model the impacts of pesticides on these important ecosystem function across the wider environment.

**Approach**

To progress this idea, we are commissioning a project comprising the following activities:

* To agree a limited range of ~5 commonly applied pesticides to investigate, probably based on the FERA pesticide usage survey. These are likely to include the following pesticides, but priority should be given based on likely usage in England, and consider the extent to which microbial responses have already been well characterised for English soils.
  + A fungicide ( Tebuconazole, Folpet, Prothioconazole)
  + A herbicide (Glyphosate, diflufenican/flufenacet,fluroxypyr)
  + An insecticide (Lambda-cyhalothrin: 70% of total treated area; Esfenvalerate:14% of total treated area; Tau-fluvalinate, Pirimicarb:
  + A growth regulator (Chlormequat)
* To carry out a rapid literature review of international publications to evaluate and characterise likely microbial community responses to application of these pesticides.
* To carry out a microcosm experiment to evaluate the response of selected English soils to this range of pesticides, in terms of their microbial community as assessed by metabarcoding. Specifically to:
  + collect arable soils from ~3 of different soil types (texture, natural pH, geographical location) from well-established organic farms, which would represent communities most unaffected by past pesticide applications – ideally these would have low organic matter contents (eg. Following recent tillage) to avoid the known community change-buffering response that this typically provides.
  + To homogenise soils, and add aliquots to micocosms, at this point also sampling the soil test material (5 replicate samples) to enable genetic characterisation of the initial microbial communities in these soils.
  + To apply a range of pesticides, or control treatments of no application, to these soils, with ~5 replicates of each treatment including the control of no pesticide application. Consideration should be given to the rate of application to the microcosms to reflect likely levels of field exposure, management of the soil in the pots – for example by growing a single winter wheat plant in each to mimic field conditions.
  + To destructively sample these microcosms after 1 month (early February 2025) and 2 months (early March 2025) following application.
  + To assess the impacts of these treatments on microbial community using 16SrRNA and ITS metabarcoding approaches, at various time stages following (or during) application of treatments.
  + To carry out bioinformatics analysis of the resulting data, to identify communities based on assemblages of OTUs and of their taxonomic identifications following BLAST, ideally linking these to known functional groups of microbes.
  + To analyse the impacts on the whole community (using dimension reduction approaches) but also to identify taxa with strong and consistent responses, that might be used as indicators for specific pesticides or groups of pesticides.
* To briefly write up the literature review, and the methods and results of the experiment in a brief technical report. We will aim to develop this into a fuller Natural England research report, and/or a paper for publication in a peer reviewed journal, potentially by combining the results of the experiment with microbial community data from the EES.
* To prepare a presentation on the project suitable for delivery at a future Natural England Soil Health Conference
* To share all data generated with Natural England, including the FASTA and other raw data files.

**Sustainability**

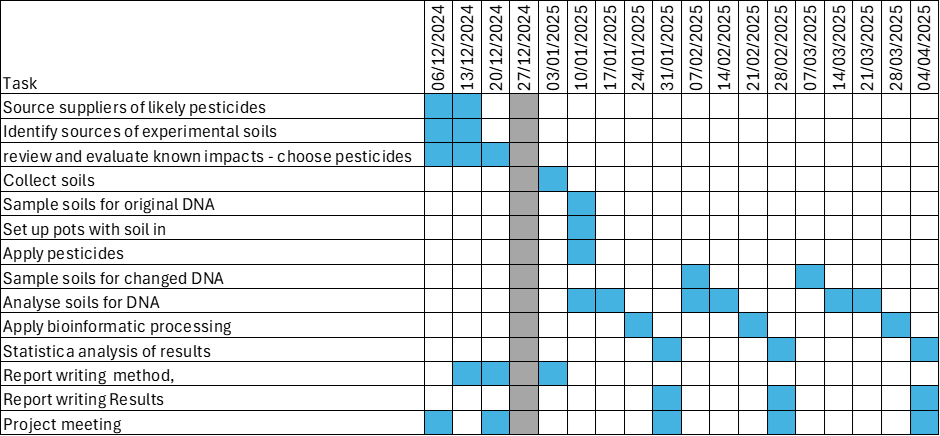
Natural England protects and improves the environment and is committed to reducing the sustainability impacts of its activities directly and through its supply chains. We expect the Contractor to share this commitment and adopt a sound, proactive sustainable approach in keeping with the 25 yr environmental plan/our commitments compliant with all applicable legislation. This includes understanding and reducing direct and indirect sustainability impacts and realising opportunities, including but not restricted to; resilience to climate change, reducing greenhouse gas emissions, water use and quality, biosecurity, resource efficiency and waste, reducing the risk of pollution, biodiversity, modern slavery and equality, diversity & inclusion, negative community impacts.

As a delivery partner, the successful contractor is expected to pursue sustainability in their operations, thereby ensuring the Contracting Authority is not contracting with a supplier whose operational outputs run contrary to the Contracting Authority’s objectives. The successful contractor will need to approach the project with a focus on the entire life cycle of the project

**Outputs and Contract Management**

The table and Gannt chart below provide a suggested project outline and dates for key deliverables. The contractor, however, is asked to review this and provide their own project outline, reflecting their delivery capabilities and plans.

|  |  |  |  |
| --- | --- | --- | --- |
| Reference | Deliverable | Responsible Party | Date of completion |
|  | Project initiation meeting | Contractor/NE | 06/12/2024 |
|  | Source suppliers of likely pesticides for use. | Contractor | 13/12/2024 |
|  | Identify sources of experimental soil | Contractor/NE | 13/12/2024 |
|  | Pesticide reivew and pre-experiment project meeting | Contractor/NE | 20/12/2024 |
|  | Collect soils | Contractor | 03/01/2024 |
|  | Set up microcosms and sample soils for initial microbial community | Contractor | 10/01/2024 |
|  | Apply pesticide treatments | Contractor | 10/01/2024 |
|  | Analyse initial soil sample by metabarcoding | Contractor | 17/01/2024 |
|  | Apply bioinformatic processing for initial soil samples | Contractor | 24/01/2024 |
|  | Statistical processing and analysis and write up of initial results | Contractor | 31/01/2025 |
|  | Project meeting | Contractor/ NE | 31/01/2025 |
|  | Conduct 1st post- treatment sampling. | Contractor | 07/02/2025 |
|  | Analyse 1st post- treatment samples by metabarcoding | Contractor | 14/02/2025 |
|  | Apply bioinformatic processing for 1st post treatment samples | Contractor | 21/03/2025 |
|  | Statistical processing, analysis and write up of results of 1st post treatment samples. | Contractor | 28/02/2025 |
|  | Project meeting | Contractor/NE | 28/02/2025 |
|  | Conduct 2nd post- treatment sampling. | Contractor | 07/03/2025 |
|  | Analyse 1st post- treatment samples by metabarcoding | Contractor | 14/03/2025 |
|  | Apply bioinformatic processing for 2nd post treatment samples | Contractor | 21/03/2025 |
|  | Statistical processing, analysis and write up of results of 2nd post treatment samples. | Contractor | 28/03/2025 |
|  | Final reports, results and presentation submitted to NE | Contractor | 31/03/2025 |
|  | Final project wrap up meeting | Contractor/NE | 31/03/2025 |



The project will be managed by Matthew Shepherd and Jonathan Griffiths for Natural England, with regular online meetings organised by the contractor, to provide updates and clarify issues and risks. Any risks identified by the contractor to the delivery of this project should be raised as early as possible by email or telephone to the project manager. All deliverables will be supplied as electronic copies. We would value suggestions from the contractor on how best to proceed with publication of the report, or a paper closely derived from it, in a peer reviewed academic journal.

**Health and Safety**

This project will involve the collection of soil from fields, and will involve experimental treatments using potentially hazardous chemicals. Please include a brief overview of how risks to your staff and others will be managed during the project. Please include your Health and Safety risk assessment, your method statement, and ensure that, once the pesticides have been chosen to use in the project, that you ensure you have COSHH assessments for these chemicals, and share the assessments with NE. Please provide links to any relevant Health and Safety policies or accreditation that you will apply during this project.

Payment

The Authority will raise purchase orders to cover the cost of the services and will issue to the awarded supplier following contract award.

The Authority’s preference is for all invoices to be sent electronically, quoting a valid Purchase Order number. We expect the successful contractor to submit 1 invoice at the end of the project covering all work completed.

It is anticipated that this contract will be awarded for a period of 18 weeks to end no later than 31/03/2025. Prices will remain fixed for the duration of the contract award period. We may at our sole discretion extend this contract to include related or further work. Any extension shall be agreed in writing in advance of any work commencing and may be subject to further competition.

**Appendix 3: Charges**

[***Guidance note: Include a clear breakdown of the charges in as much detail as necessary***]

**Appendix 4: Processing Personal Data**

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| **[XXXX]** |
| **Contract:** |
| **Date:** | **[XXXX]** |
| **Description of authorised processing** | **Details** |
| Identity of Controller and Processor for each category of Personal Data |  |
| Subject matter of the processing |  |
| Duration of the processing |  |
| Nature and purposes of the processing |  |
| Type of Personal Data |  |
| Categories of Data Subject |  |
| Plan for return and destruction of the data once the processing is complete UNLESS requirement under law to preserve that type of data |  |
| Locations at which the Contractor and/or its subcontractors process Personal Data under this Agreement |  |
| Protective Measures that the Contractor and, where applicable, its subcontractors have implemented to protect Personal Data processed under this Agreement against a breach of security (insofar as that breach of security relates to data) or a Personal Data Breach |  |