

Behavioural Science Call-off Framework

Call-off Form – Direct Award

Geospatial nudges for hypothetical Sustainable Farming Incentive (SFI)
funding agreement

Summary of Research



Department
for Environment
Food & Rural Affairs

BSF reference number: 003

Cost centre code: 10021354

Date: 12 November 2024

Proposed start date: 20 December 2024

Proposed end date: 28 May 2025

The specification must not exceed 10 side of A4.

1. Objectives

1.1 Project Background

What work has been done in the area previously, where is the evidence gap?

This experiment is part of our Choice Architecture Test (CAT) series. We have already conducted two tests, CAT 1 and CAT 2, and this will be our third test (CAT 3).

- **CAT 1:** tested the effect of defaults on a hypothetical Sustainable Farming Incentive (SFI) application. Results showed a statistically significant increase in the environmental quality of the agreement generated through defaults compared to the current SFI application design.
- **CAT 2** tested the effect of defaults and guided selection on a hypothetical Countryside Stewardship (CS) mid-tier application. Results for CAT 2 also showed defaults being effective. Compared to the current CS mid-tier design & some aspects of guided selection tested during the experiment, defaults led to more spatially targeted actions being chosen (the primary outcome of the experiment) by farmers, that might indicate higher quality environmental agreements¹.

Research indicates that farmers want CS and SFI applications to be easy to complete. Farmers also struggle to identify the most beneficial combination of actions for their land, needing specialist advice to do so. CAT 1 demonstrated that defaults can address these needs in the context of SFI applications from applicants with existing agreements, via a default which was based on those prior agreements. CAT 2's results also helped demonstrate this same finding for CS mid-tier applications (regarding a spatially targeted default). Taken together, these experiments demonstrate that defaulting is an effective nudge, both when it is used to get users to re-commit to pro-environmental behaviours, or to adopt new, more ambitious pro-environmental behaviours.

Additionally, we also know from qualitative research that farmers find visual guidance— such as map layers showing spatial priorities and photographs – helpful when making decisions. However, the current CS and SFI application processes lack this kind of geospatial functionality. This also means Defra has not yet tested the potential benefit of geospatial functionality at scale.

Furthermore, a key motivator for farmers is the financial reward from CS and SFI. CAT 1 & 2 have shown defaults to be effective across two different contexts. Now, we will test the effect of offering defaults alongside a totaliser that shows the potential financial reward for choosing the default options. This not only improves the ease of application, but also tests the assumption that making the potential financial reward of adopting default options more salient can be a key motivator.

We hope to conduct this research, that will allow us to test both interventions, via a randomised controlled trial (RCT). If the experiment yields statistically significant positive results, it will firmly establish the importance of using geospatial functionality and/or defaulted pre-selected options alongside a totaliser to provide feedback to farmers about the benefits of choosing more ambitious options.

¹ Note: the sample size for this experiment was below the minimum requirement for establishing confidence in causality, so the results should be interpreted with caution. However, our two experiments provide strong evidence that defaults are effective in yielding higher quality environmental agreements.

1.2 Policy Context

What is the policy this research intends to inform? What are the risks of not filling this evidence gap?

The British Government is committed to a broad range of ambitious environmental targets, set out in primary legislation. To meet these targets, the English landscape will need to be managed in certain specific ways. Agri-environment schemes (AES) are an important tool for encouraging farmers to adopt and continue management practices that encourage biodiversity, sequester carbon, and reduce pollution; the structure and content of these schemes in the UK was, until recently, subject to the European Union's Common Agricultural Policy (CAP).

Following the UK's exit from the EU, England was no longer subject to the CAP – creating the opportunity for major reforms to AES in England. A new suite of schemes – known collectively as Environmental Land Management (ELM) – have been designed for England, to help farmers and other land managers deliver our ambitious environmental targets.

ELM includes three schemes – the Sustainable Farming Incentive (SFI), Countryside Stewardship (CS) and Landscape Recovery (LR). While LR operates according to a collaborative bidding process, SFI and CS allow individual farmers and land managers to apply for funding and access technical guidance to support land management actions that deliver environmental outcomes. SFI covers actions that are easy to deliver and broadly applicable across a wide variety of farm types, with the aim of delivering mass uptake amongst most of the farming population. CS, by contrast, exists to fund more environmentally ambitious, technically specialised actions that need to be spatially targeted. Spatial targeting is a process which enables a system to indicate to customers which actions are likely to be particularly environmentally beneficial for a given piece of land. There are significant pressures to ensure that land is used for the optimum purpose – such as the balance between the desire to maintain food production at current levels, and to dramatically increase carbon storage and biodiversity – and so achieving optimum spatial targeting of high-value agri-environmental options on the land where they will deliver the greatest benefit is a key priority.

Currently, farmers access the expertise needed to site actions from a variety of sources: such as private or state-funded advice, or through reading technical guidance that is available on gov.uk. Advice is expensive – either for farmers or for the taxpayer – while written guidance is complicated, and time-consuming to read. The evaluation of live iterations of CS show that uptake of more ambitious options is low, with most farmers choosing less ambitious options that are more familiar, and therefore easier to incorporate into a business plan and carry out. Furthermore, farmers have provided significant amounts of negative feedback about the application process of CS – which involves scrolling through a long, unstructured list of hundreds of options, listed in order of publication – which they say is time-consuming, complicated, and confusing. While written guidance on spatial priorities – which actions are best delivered in specific places - is available, farmers have complained that this is difficult to understand and interpret.

This experiment will help us understand better the process by which farmers make decisions about which actions are best suited to their farm. In particular, it will help us understand the role of feedback – whether delivered through abstract or visual means – on making that process easier.

1.3 Stakeholders

Who are the key stakeholders for this project? Include both internal and external stakeholders.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

1.4 High level project objectives

What are you aiming to achieve through this research project? What behaviours are you seeking to influence or understand?

We want to help farmers and other land managers make better decisions about how to use their land. We want to understand the extent to which providing digital maps based on geospatial datasets regarding different environmental targets – e.g. tree planting, peatland restoration, food production – will encourage participants to choose to deliver the right things in the right places. Our intention is to test this in the context of setting up an Environmental Land Management (ELM) funding agreement. Farmers’ real land data will be used, but the study will be based on a hypothetical agreement. It will be made clear that the study will not affect any farmers’ existing CS or SFI agreements (for those participants that have existing agreements).

We require the contractor to build a dummy application platform that supports a geospatial functionality that can draw down RPA land data from Defra Data Services Platform. The RPA makes land parcel data available via an Application Programming Interface (API) to third parties, by which customer spatial land parcel, cover and hedge data can be utilised in mapping and farming software. This is the access route to utilising customer spatial data for this project.

Additionally, we would also like to test the hypothesis that providing defaulted options with a totaliser showing the total annual value of the options to the agreement holder presented during the decision-making process, also improves the uptake of higher quality environmental agreements. This totaliser would update every time a specific option is selected, or de-selected, and thus could reduce the likelihood that farmers will de-select options. The aim is for the totaliser to function as an interactive tool integrated into the decision-making interface. This real-time feedback mechanism aims to enhance the visibility of the financial benefits tied to options, thereby reinforcing the incentive to retain these options.

The hypothesis is grounded in behavioural economics, testing whether offering immediate and clear financial feedback, and leveraging the psychological impact of seeing potential earnings accumulate can significantly influence decision-making. By making the potential financial rewards more salient, the totaliser is expected to act as a persuasive tool, encouraging farmers to adhere to the defaulted options yielding higher quality environmental agreements.

2. Project Requirements

2.1 Audience Groups

Whose behaviour are you aiming to change and in what context? Include how suppliers will access sample population and any quotas of interest. Please be as specific as possible E.g. dairy farmers in Somerset, UK general population adults aged between 18-35.

Farmers and other land managers (such as foresters, landowners, land agents, conservationists, site managers of rural businesses) in England above the age of 18, in the context of option selection during a mock SFI application.

2.2 Theory of Change / Logic Model

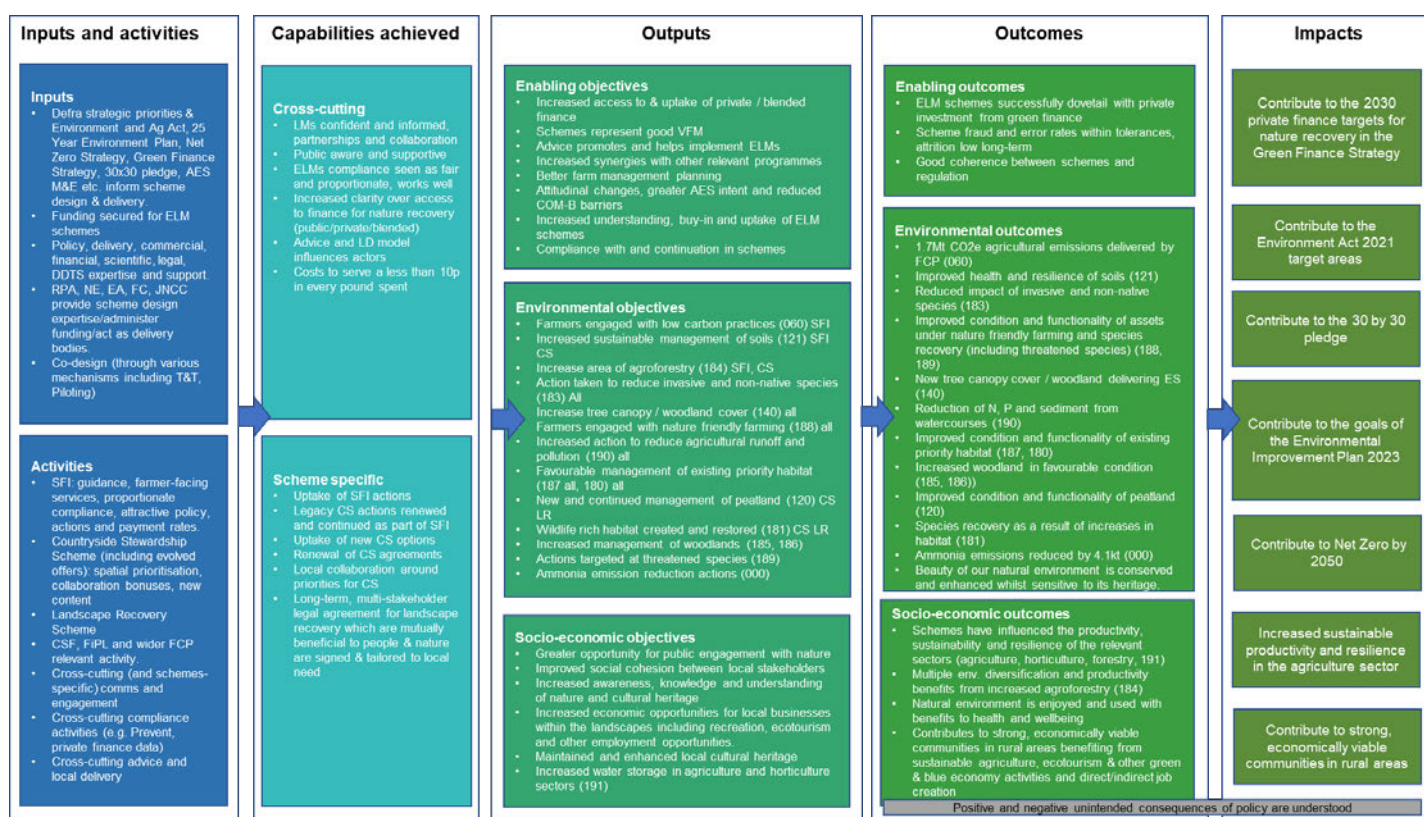
If applicable... Do you need support with creating a Theory of Change or a Logic model? If you have already developed one, please submit a copy with this call-off form. If you wish to commission a Theory of Change, please use Defra's Theory of Change [toolkit](#).

P.T.O

Our Behavioural Logic Model:

Factor type	(Some) farmers and other land managers...	Defra intervention could...	So farmers and land managers...	Resulting in...
Motivation	...lack confidence or trust in Defra. ... have little or no intrinsic motivation to deliver the environmental outcomes we need.	... pay farmers on time, communicate consistently, and adopt a more collaborative, less punitive approach ... co-design a compelling and reliable vision of the future, and encourage ambitious new entrants.	... trust Defra, engage with us, believe what we say, and feel more confident. ... feel inspired as a sector to deliver more for nature, while maintaining food production.	... bigger, better, more joined up outcomes for schemes, creating a holistic approach to support farmers, land managers and their businesses.
Capability	... lack knowledge and skills (esp. digital literacy and environmental know-how). ... have limited cognitive bandwidth for admin (due to stress, neurodiversity).	... produce clear, accessible guidance, targeted advice, and responsive support. ... simplify our application and compliance processes.	... find it easier to apply and comply with regulations and best practice.	... higher uptake and less environmental damage. ... lower stress and greater wellbeing for farmers.
Opportunity	... lack access to business resources (financial, legal, agronomic, digital) and digital infrastructure. ... are locked in to the status quo. ... feel peer pressure to farm conventionally.	... pay farmers a fair rate in flexible schemes, with premiums for ambitious delivery. ... promote collaboration, local leadership and peer-to-peer learning to co-design pro-environmental norms and policies.	... experience a strong business rationale for joining schemes, and identify new opportunities. ... adopt pro-environmental sectoral norms, reinforced by others, and innovate.	... higher uptake, greater resilience and innovation within the sector. ... a culture of ambitious environmental stewardship.

Our ELM Theory of Change Model:



2.3 Research Questions

What are your detailed research questions?

Research Question 1 (RQ1): What effect, if any, does geospatial functionality have on agreement score, compared to a control design with unfiltered lists of options.

2.4 Proposed Methodology

Please see supplier [prospectuses](#) for a range of methods suppliers can offer. You can specify a methodological requirement or ask suppliers to propose an appropriate methodology.

Initially, we planned to conduct this experiment online. However, due to sample size issues, we now aim to perform it as a field experiment. This decision was made due to field experiments allowing us to claim causality with a smaller sample size compared to online experiments. We would want the supplier to conduct an in-person cluster RCT. Following a call with the potential supplier, we look forward to receiving a few options from them on testing our central hypothesis regarding the importance of geospatial data. For example, and not limited to:

- A simplified test, using a static map that showed spatial priorities.
- Testing a prototype user interface with geospatial functionality.
- Collaborating with an existing third-party geospatial mapping tool to analyse user data.

The following farmer data will need to be obtained from Defra Data Services Platform via RPA's API:

- Land Parcels: a unique code/numbers assigned to specific parts of land to keep track of ownership etc. so when someone inputs their SBI number, they can then view their land parcels.
- Base Map: a background map that shows general geographical features like roads, rivers, landmarks.
- Land Cover Data: a description of what you see on the ground such as forests, water, grasslands etc.
- (If possible) Live agreement data: information about legal agreements like CS/SFI. This is not necessary however, if it cannot be obtained. It can always be made clear to farmers & land managers to assume it is a new application they are applying for.
- Spatial Prioritisation Data: geographic information used to identify and rank areas based on specific criteria for informed decision-making in land use and resource management.

2.5 Interventions to design or test

If applicable... Do interventions require designing? Are interventions already designed and requiring testing, in which contexts or through which channels?

Interventions will require designing, including calculating the required sample size for three groups:

- a) Control group: unfiltered list.
- b) Treatment group: geospatial functionality.

2.6 Outcomes to measure

What is the behavioural outcome measure? E.g. participants sign up to a new service, or participants buy local produce.

The primary outcome of measure will be the total agreement score calculated from options selected, during the experiment. The following should also be recorded for each participant:

- Which and how many options were chosen/answers entered on each page of the application form.
- Whether a participant successfully completes a page and proceeds with the application or drops out from the application on each page.
- Whether participants successfully submit the application form.
- Time spent on each page of the application form.

Appropriate statistical analysis (e.g. ANOVA/t-tests/regression analysis including pairwise comparisons) should be conducted to answer RQ1, RQ2 & RQ3 and to compare between each other. Any further analysis that can be obtained from secondary outcomes should also be conducted.

Testing for statistical significance should be avoided for secondary outcomes to avoid the risk of false type 1 errors arising from additional null-hypothesis testing.

2.7 Outputs and deliverables

How should findings be reported? Please see supplier [prospectuses](#) for a range of presentation methods. Consider documents for both public and internal government use. For publishable documents, ensure your findings comply with [accessibility requirements](#) and use Defra templates wherever possible.

The results of this research will aim to inform policy development and therefore, the following output from the supplier is requested:

- Report in a slide deck format to be shared with Defra at the end of the project.
- A presentation with Defra and any other relevant audience at the end of the project.
- Raw data & analysis code (i.e. formulas used for statistical analysis) to be shared with Defra at the end of the project.
- An article to be co-produced with Defra and published in an academic journal.

3. Project Management

3.1 Timings

What are the expected start and end dates for the project? What are the key milestones and dependencies to be aware of?

Start Date:

Friday 20 Dec'24

Design stage (4.5 weeks accounting for Christmas week off & NY week off):

Week 23 & 30 Dec: off for Christmas and New Year's.

w/c 6 Jan – 5 Feb'25.

Fieldwork phase (4 weeks):

6 Feb – 6 Mar'25.

Data Analysis & drafting first report (2 weeks):

6 Mar – 20 Mar'25.

Defra comments on first draft (3 days):

21st – 25th Mar'25.

Revision of the report (4 days):

26th – 31st Mar'25.

Defra sign off on second draft (2 days):

2nd April – 3rd April'25.

Final Presentation Behavioural Insights Team to Defra:

Between Monday 31 March 2025 – Friday 4 April 2025.

End date: 28 May '25.

3.2 Budget

What is your maximum approved budget for this project?

£100,000. Following an initial meeting with the contractor, we welcome a variety of delivery options they propose for this project, even if some exceed our initial budget.

4. Sustainability and Social Value

4.1 Sustainability considerations

Are there any sustainability risks or considerations the supplier needs to know?

N/A.

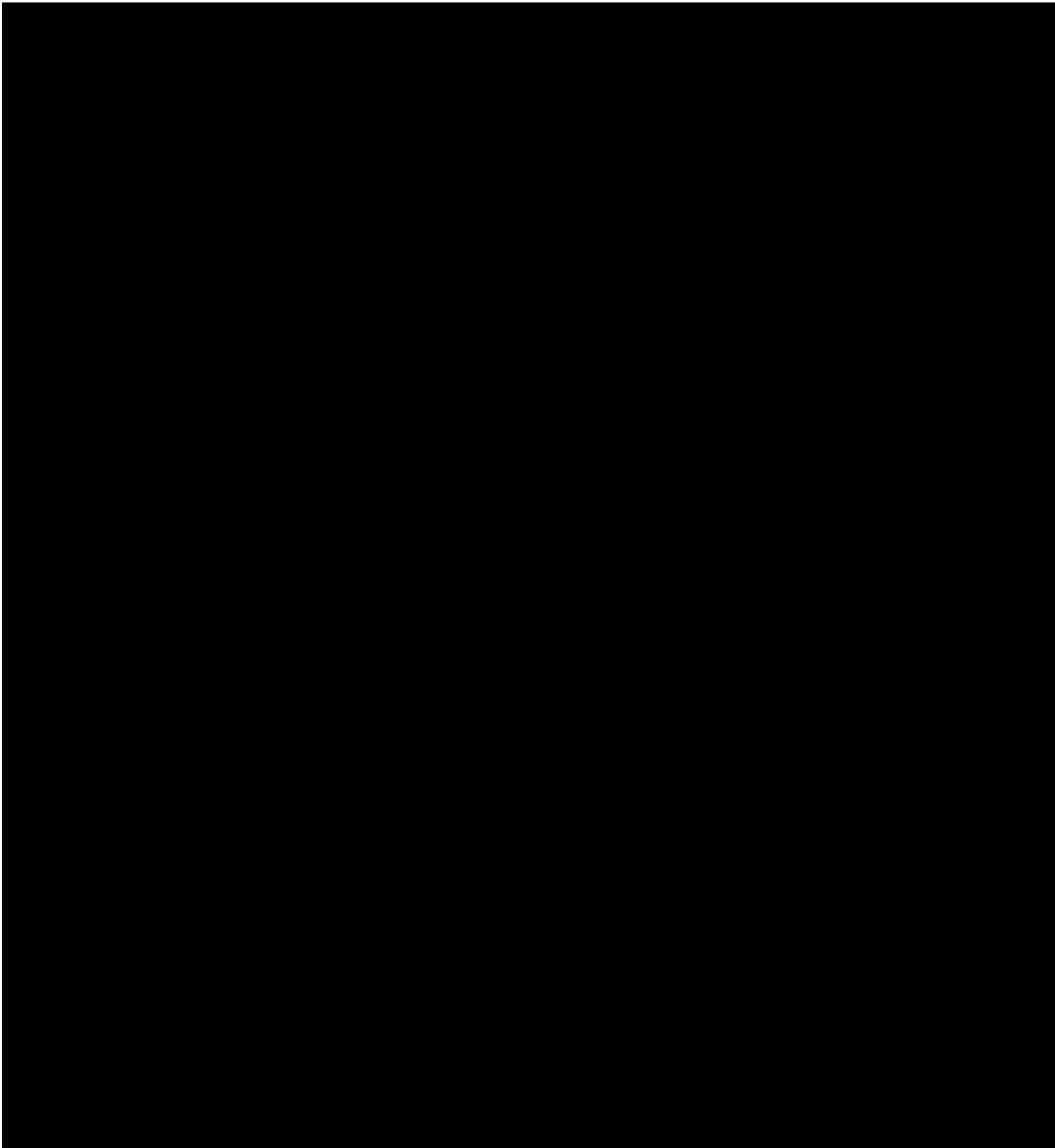
4.2 Social value considerations

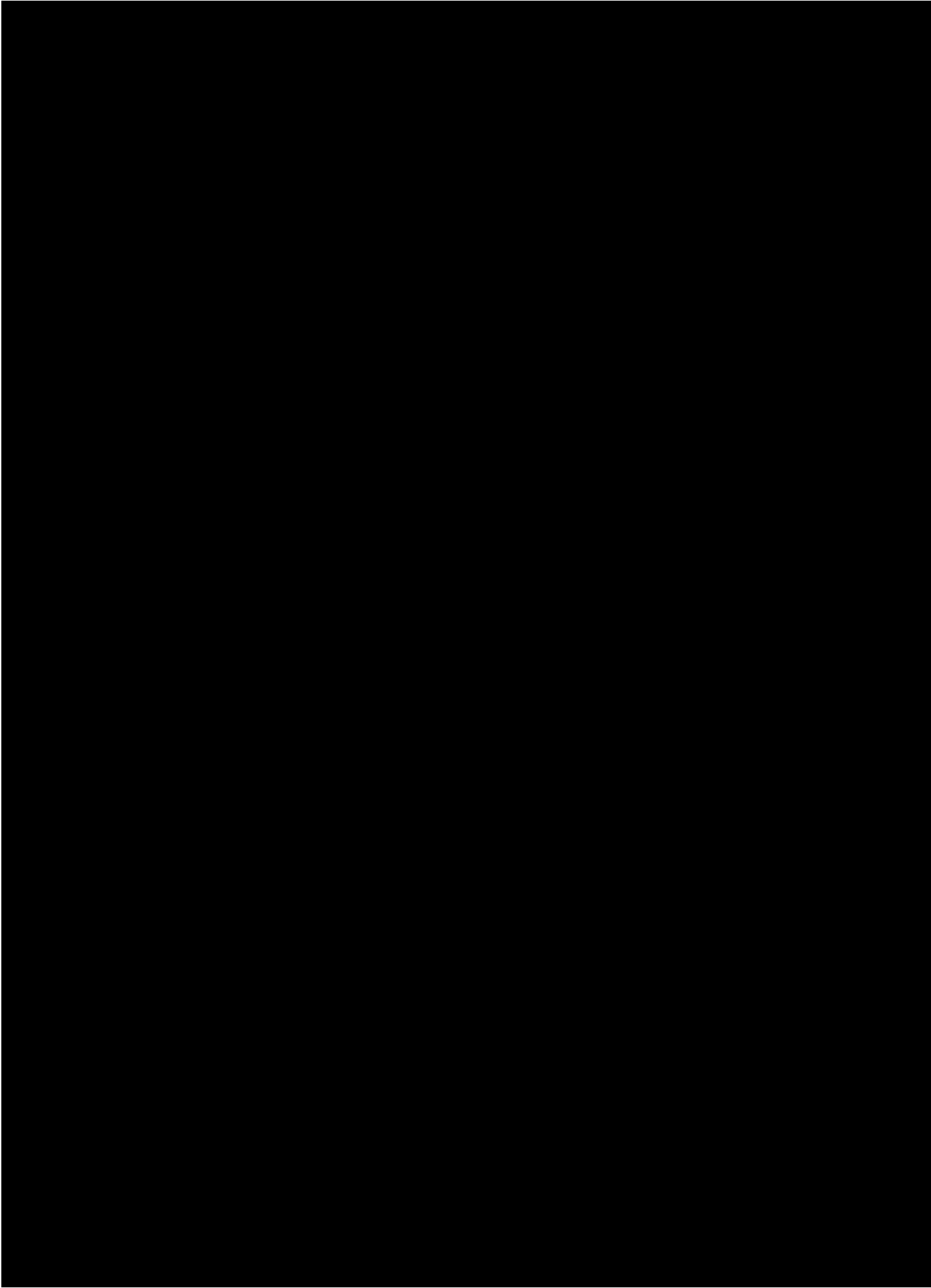
Are there any social value risks or considerations the supplier needs to know?

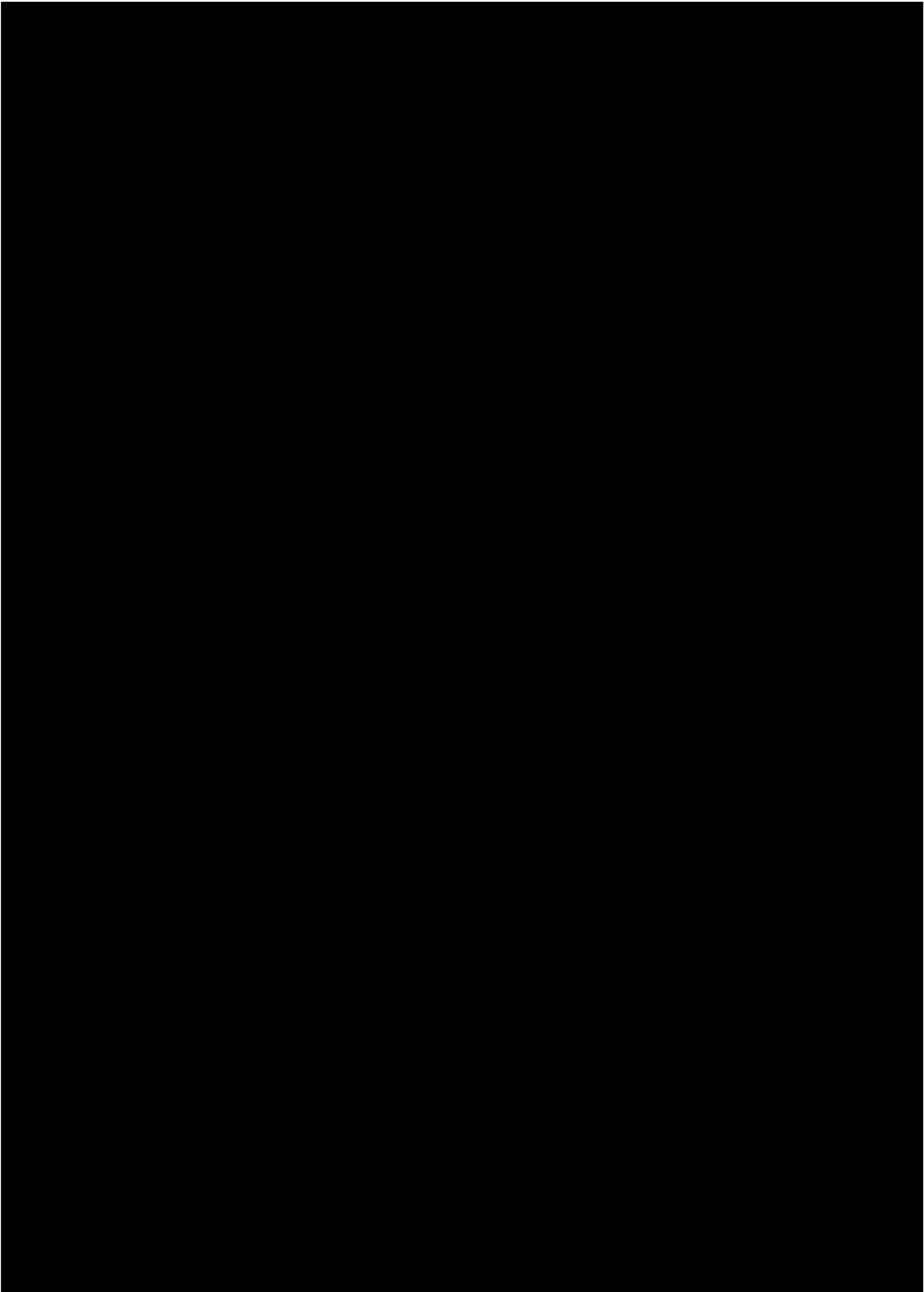
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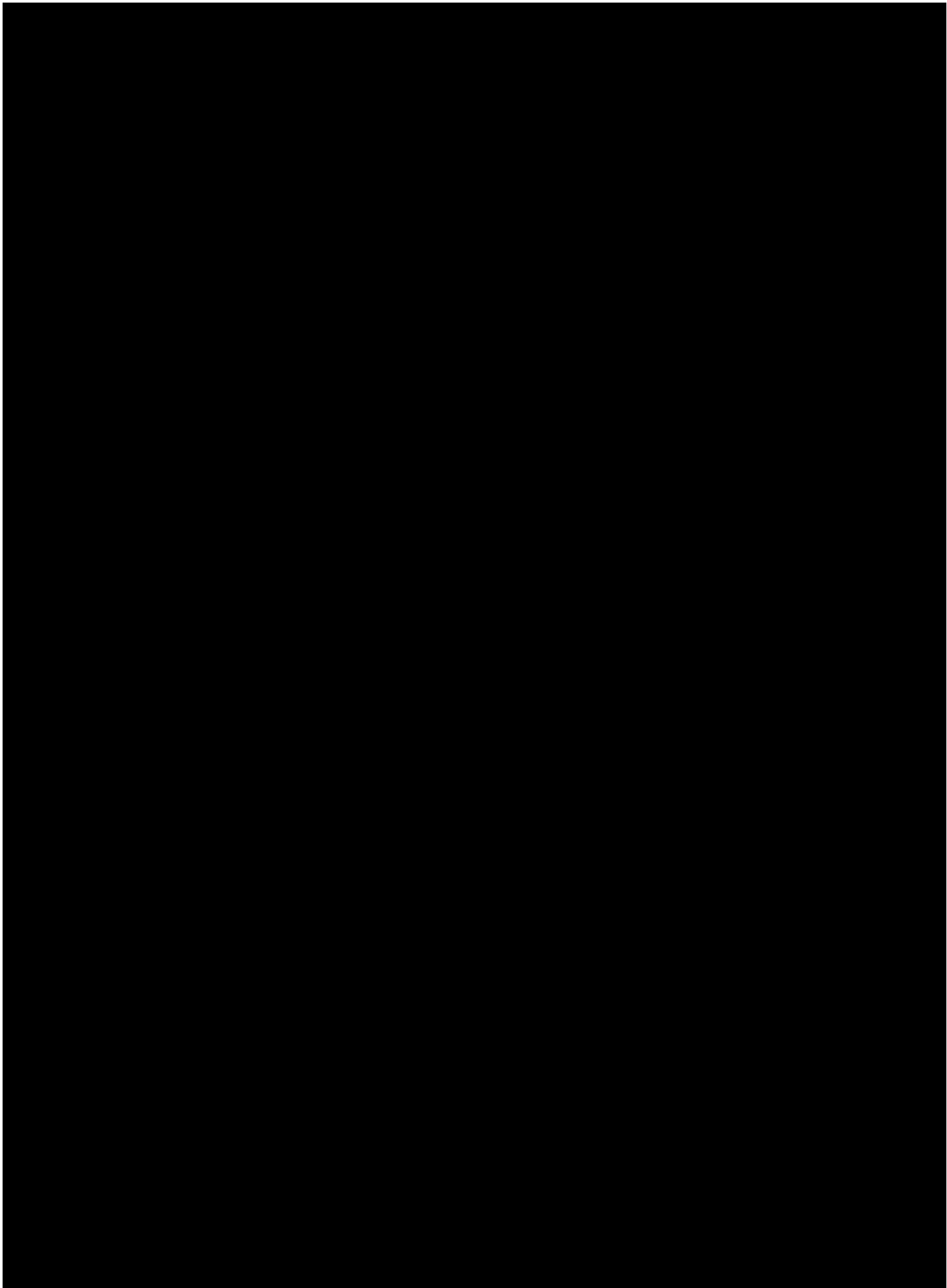
Supplier name: Behavioural Insights Team. Date: 10th January 2024

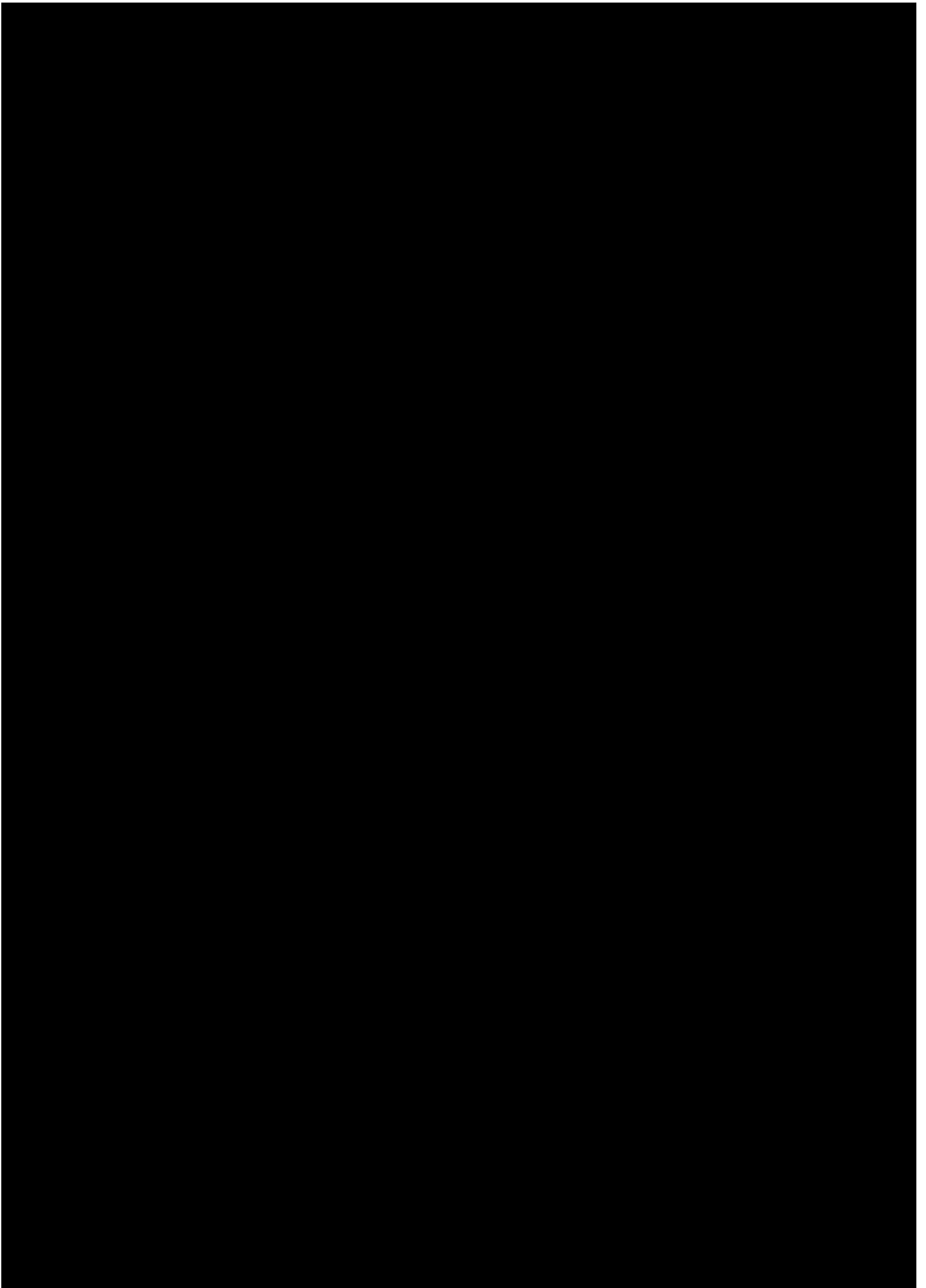
1. Proposed Methodology

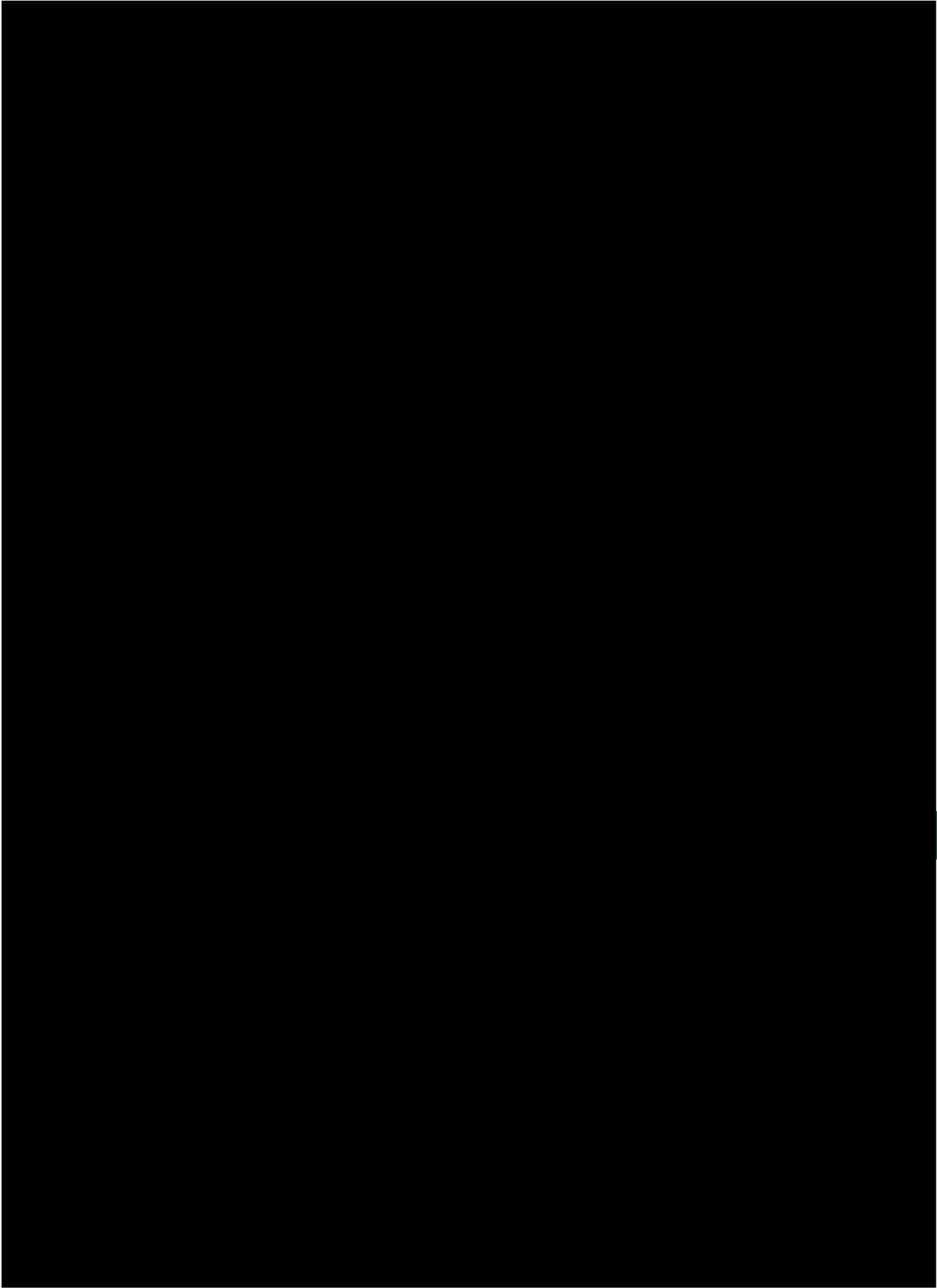


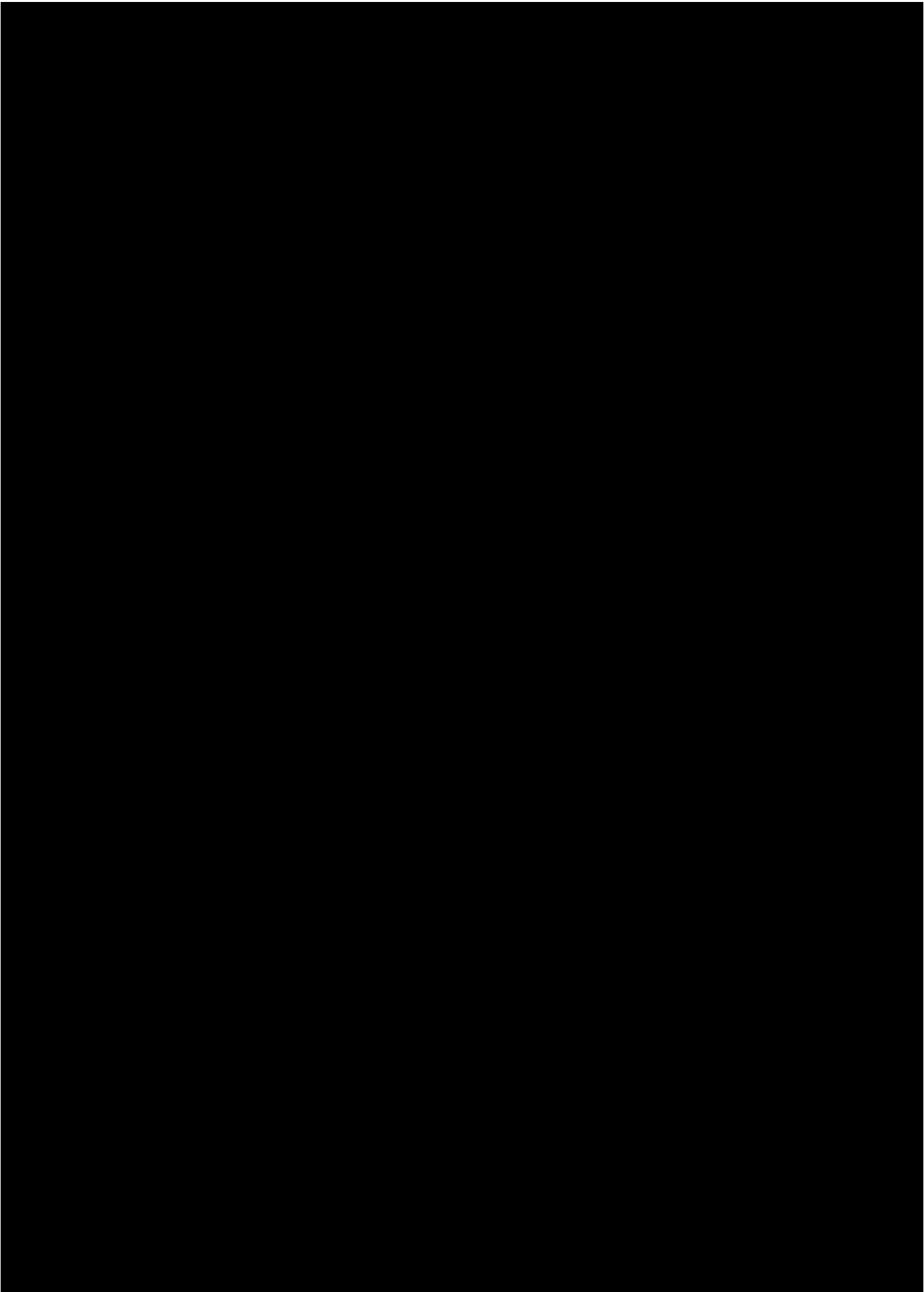


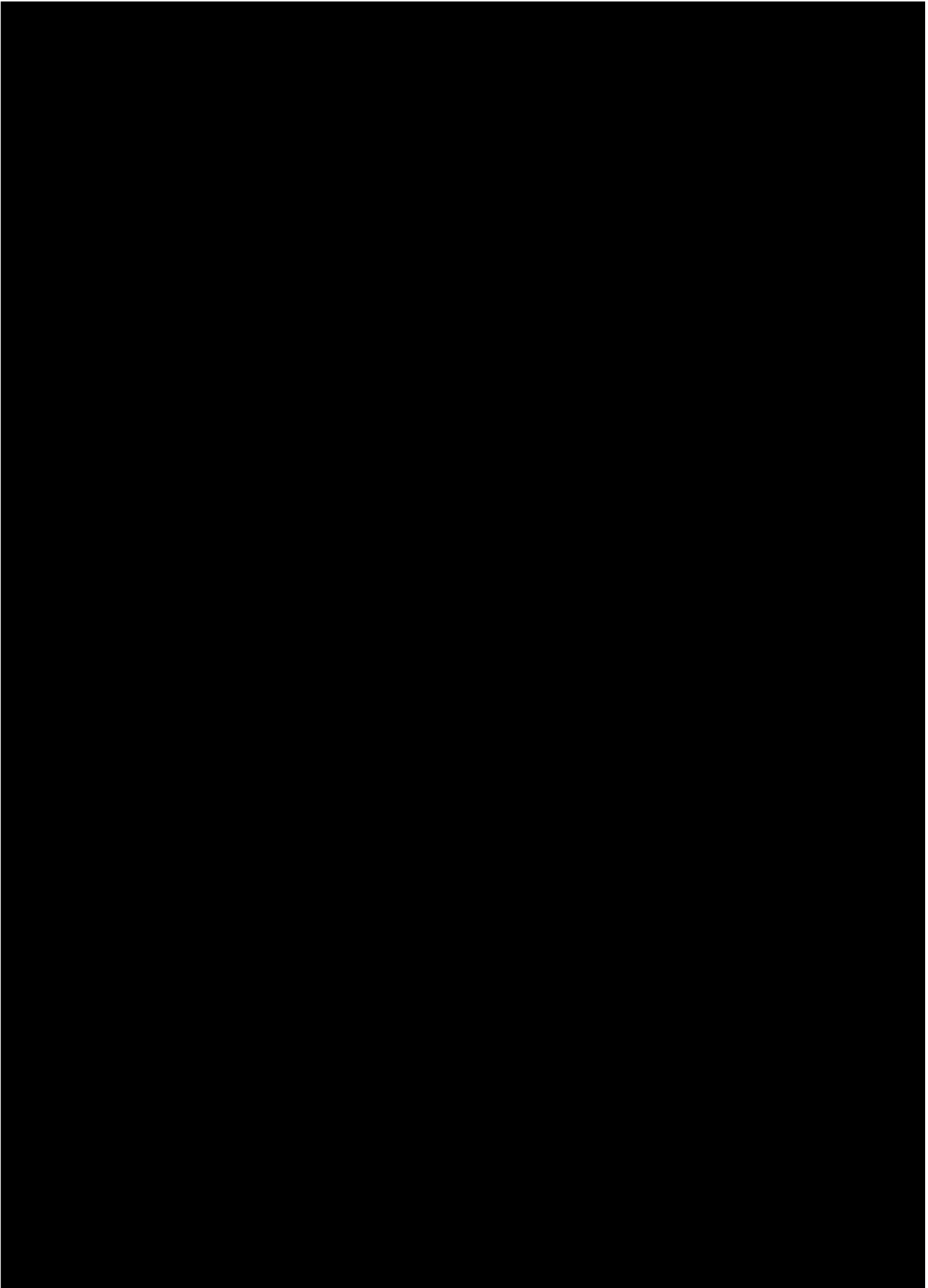


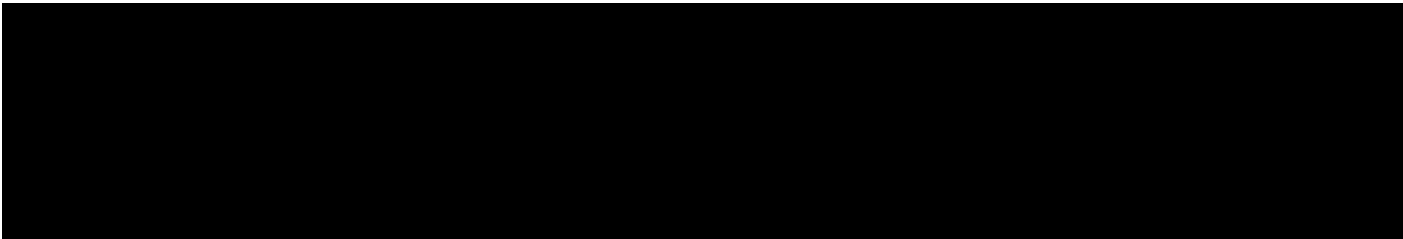












The Contracting Authority: Department for Environment, Food and Rural Affairs

The [Contractor](#): Behavioural Insights Team

This Order Form is for the provision of the Call-Off Deliverables and dated **06/02/2025**. It is issued under the Behavioural Science Call-off Framework Agreement with **Behavioural Insights Team** reference **C27988** for the provision of **Geospatial nudges for hypothetical Sustainable Farming Incentive (SFI) funding agreement**.

On agreement of the Proposal, this Order Form should be uploaded to Atamis and signed by Defra Group Commercial and the supplier. When completed and executed by both Parties, this forms a Call-Off Contract.

Call-off Contract incorporated terms: The following documents are incorporated into this Call-Off Contract. If the documents conflict, the following order of precedence applies:

1. Defra's Behavioural Science Call-off Framework Terms and Conditions
2. Specification
3. Proposal

No other Supplier terms are part of the Call-Off Contract. That includes any terms added to this Order Form or presented at the time of delivery.

Call-off contract start date: 01/05/2024

Call-off contract expiry date: 30/04/2027

