

Dr Elta Smith
RAND Europe
Westbrook Centre
Milton Road
Cambridge
CB4 1YG

Date: 18th January 2018

Our ref: FS301042

Dear Dr Smith,

Award of contract for the supply of Insights on global food system risks and their implications for FSA

Following your tender/ proposal for the supply of **Insights on global food system risks and their implications for FSA** to Food Standards Agency, we are pleased to award this contract to you.

This letter (Award Letter) and its Annexes set out the terms of the contract between Food Standards Agency as the Customer and RAND Europe as the Supplier for the provision of the Services. Unless the context otherwise requires, capitalised expressions used in this Award Letter have the same meanings as in the terms and conditions of contract set out in Annex 1 to this Award Letter (the "**Conditions**"). In the event of any conflict between this Award Letter and the Conditions, this Award Letter shall prevail. Please do not attach any Supplier terms and conditions to this Award Letter as they will not be accepted by the Customer and may delay the conclusion of the Agreement.

For the purposes of the Agreement, the Customer and the Supplier agree as follows:

- 1) The Services shall be performed at the Supplier's premises
- 2) The Technical Proposal for the Services shall be as set out in Annex 3 and the charges at Annex 4 (Supplier's Financial Proposal).
- 3) The specification of the Services to be supplied is as set out in Annex 2.
- 4) The Term shall commence on 15th January 2018 and the Expiry Date shall be 30th September 2018 (unless extended or subject to early termination).
- 5) The address for notices of the Parties are:

Customer

Food Standards Agency, Foss House,
Peasholme Green, York YO1 7PR

Supplier

RAND Europe Community Interest
Company, Westbrook Centre, Milton Road,
Cambridge, CB4 1YG

- 6) The following persons are Key Personnel for the purposes of the Agreement:

Name

Dr Elta Smith

Dr Richard Silbergliitt

Dr Jon Freeman

Title

Project Leader

Expert Advisor

Expert Advisor



**Food
Standards
Agency**
food.gov.uk

Dr Camilla d'Angelo
Anna Isabela Knack
Stijn Hoorens

Project Manager
Researcher
Quality Assurance

- 7) The Customer may require the Supplier to ensure that any person employed in the provision of the Services has undertaken a Disclosure and Barring Service check. The Supplier shall ensure that no person who discloses that he/she has a conviction that is relevant to the nature of the Services, relevant to the work of the Customer, or is of a type otherwise advised by the Customer (each such conviction a “**Relevant Conviction**”), or is found by the Supplier to have a Relevant Conviction (whether as a result of a police check, a Disclosure and Barring Service check or otherwise) is employed or engaged in the provision of any part of the Services.

Payment

All invoices must be sent, quoting a valid purchase order number (PO Number), to: Accounts-Payable.fsa@sscl.gse.gov.uk. Within 10 working days of receipt of your countersigned copy of this letter, we will send you a unique PO Number. You must be in receipt of a valid PO Number before submitting an invoice.

To avoid delay in payment it is important that the invoice is compliant and that it includes a valid PO Number, PO Number item number (if applicable) and the details (name and telephone number) of your Customer contact (i.e. Contract Manager). Non-compliant invoices will be sent back to you, which may lead to a delay in payment. If you have a query regarding an outstanding payment please contact our Accounts Payable section.

We thank you for your co-operation to date, and look forward to forging a successful working relationship resulting in a smooth and successful delivery of the Services. Please confirm your acceptance of the award of this contract by signing and returning the enclosed copy of this letter to me by e-mail at the above address **within 7** days from the date of this letter. No other form of acknowledgement will be accepted. Please remember to quote the reference number above in any future communications relating to this contract.

Yours faithfully,

Mark Croft
Procurement Category Manager

Annex 1

Terms and Conditions of Contract for Services

1 Interpretation

1.1 In these terms and conditions:

“Agreement”	means the contract between (i) the Customer acting as part of the Crown and (ii) the Supplier constituted by the Supplier’s countersignature of the Award Letter and includes the Award Letter and Annexes;
“Award Letter”	means the letter from the Customer to the Supplier printed above these terms and conditions;
“Central Government Body”	means a body listed in one of the following sub-categories of the Central Government classification of the Public Sector Classification Guide, as published and amended from time to time by the Office for National Statistics: <ul style="list-style-type: none"> (a) Government Department; (b) Non-Departmental Public Body or Assembly Sponsored Public Body (advisory, executive, or tribunal); (c) Non-Ministerial Department; or (d) Executive Agency;
“Charges”	means the charges for the Services as specified in the Award Letter;
“Confidential Information”	means all information, whether written or oral (however recorded), provided by the disclosing Party to the receiving Party and which (i) is known by the receiving Party to be confidential; (ii) is marked as or stated to be confidential; or (iii) ought reasonably to be considered by the receiving Party to be confidential;
“Customer”	means the person named as Customer in the Award Letter;
“DPA”	means the Data Protection Act 1998;
“Expiry Date”	means the date for expiry of the Agreement as set out in the Award Letter;
“FOIA”	means the Freedom of Information Act 2000;
“Information”	has the meaning given under section 84 of the FOIA;
“Key Personnel”	means any persons specified as such in the Award Letter or otherwise notified as such by the Customer to the Supplier in writing;
“Party”	means the Supplier or the Customer (as appropriate) and “Parties” shall mean both of them;
“Personal Data”	means personal data (as defined in the DPA) which is processed by the Supplier or any Staff on behalf of the Customer pursuant to or in connection with this Agreement;
“Purchase Order Number”	means the Customer’s unique number relating to the supply of the Services;
“Request for Information”	has the meaning set out in the FOIA or the Environmental Information Regulations 2004 as relevant (where the meaning set out for the term “request”

shall apply);

- “Services” means the services to be supplied by the Supplier to the Customer under the Agreement;
- “Specification” means the specification for the Services (including as to quantity, description and quality) as specified in the Award Letter;
- “Staff” means all directors, officers, employees, agents, consultants and contractors of the Supplier and/or of any sub-contractor of the Supplier engaged in the performance of the Supplier’s obligations under the Agreement;
- “Staff Vetting Procedures” means vetting procedures that accord with good industry practice or, where requested by the Customer, the Customer’s procedures for the vetting of personnel as provided to the Supplier from time to time;
- “Supplier” means the person named as Supplier in the Award Letter;
- “Term” means the period from the start date of the Agreement set out in the Award Letter to the Expiry Date as such period may be extended in accordance with clause 4.2 or terminated in accordance with the terms and conditions of the Agreement;
- “VAT” means value added tax in accordance with the provisions of the Value Added Tax Act 1994; and
- “Working Day” means a day (other than a Saturday or Sunday) on which banks are open for business in the City of London.

1.2 In these terms and conditions, unless the context otherwise requires:

- 1.2.1 references to numbered clauses are references to the relevant clause in these terms and conditions;
- 1.2.2 any obligation on any Party not to do or omit to do anything shall include an obligation not to allow that thing to be done or omitted to be done;
- 1.2.3 the headings to the clauses of these terms and conditions are for information only and do not affect the interpretation of the Agreement;
- 1.2.4 any reference to an enactment includes reference to that enactment as amended or replaced from time to time and to any subordinate legislation or byelaw made under that enactment; and
- 1.2.5 the word ‘including’ shall be understood as meaning ‘including without limitation’.

2 Basis of Agreement

- 2.1 The Award Letter constitutes an offer by the Customer to purchase the Services subject to and in accordance with the terms and conditions of the Agreement.
- 2.2 The offer comprised in the Award Letter shall be deemed to be accepted by the Supplier on receipt by the Customer of a copy of the Award Letter countersigned by the Supplier within [7] days of the date of the Award Letter.

3 Supply of Services

- 3.1 In consideration of the Customer’s agreement to pay the Charges, the Supplier shall supply the Services to the Customer for the Term subject to and in accordance with the terms and conditions of the Agreement.
- 3.2 In supplying the Services, the Supplier shall:
- 3.2.1 co-operate with the Customer in all matters relating to the Services and comply with all



the Customer's reasonable instructions;

- 3.2.2 perform the Services with all reasonable care, skill and diligence in accordance with good industry practice in the Supplier's industry, profession or trade;
 - 3.2.3 use Staff who are suitably skilled and experienced to perform tasks assigned to them, and in sufficient number to ensure that the Supplier's obligations are fulfilled in accordance with the Agreement;
 - 3.2.4 ensure that the Services shall conform with all descriptions and specifications set out in the Specification except as otherwise specified in Annex 3;
 - 3.2.5 comply with all applicable laws; and
 - 3.2.6 provide all equipment, tools and vehicles and other items as are required to provide the Services.
- 3.3 The Customer may by written notice to the Supplier at any time request a variation to the scope of the Services. In the event that the Supplier agrees to any variation to the scope of the Services, the Charges shall be subject to fair and reasonable adjustment to be agreed in writing between the Customer and the Supplier.

4 Term

- 4.1 The Agreement shall take effect on the date specified in Award Letter and shall expire on the Expiry Date, unless it is otherwise extended in accordance with clause 4.2 or terminated in accordance with the terms and conditions of the Agreement.
- 4.2 The Customer may extend the Agreement for a period of up to 6 months by giving not less than 10 Working Days' notice in writing to the Supplier prior to the Expiry Date. The terms and conditions of the Agreement shall apply throughout any such extended period.

5 Charges, Payment and Recovery of Sums Due

- 5.1 The Charges for the Services shall be as set out in the Award Letter and shall be the full and exclusive remuneration of the Supplier in respect of the supply of the Services. Unless otherwise agreed in writing by the Customer, the Charges shall include every cost and expense of the Supplier directly or indirectly incurred in connection with the performance of the Services.
- 5.2 All amounts stated are exclusive of VAT which shall be charged at the prevailing rate. The Customer shall, following the receipt of a valid VAT invoice, pay to the Supplier a sum equal to the VAT chargeable in respect of the Services.
- 5.3 The Supplier shall invoice the Customer as specified in the Agreement. Each invoice shall include such supporting information required by the Customer to verify the accuracy of the invoice, including the relevant Purchase Order Number and a breakdown of the Services supplied in the invoice period. Customer shall supply Supplier a valid Purchase Order Number within 14 days of the last signature of this Agreement.
- 5.4 In consideration of the supply of the Services by the Supplier, the Customer shall pay the Supplier the invoiced amounts no later than 30 days after verifying that the invoice is valid and undisputed and includes a valid Purchase Order Number. The Customer may, without prejudice to any other rights and remedies under the Agreement, withhold or reduce payments in the event of unsatisfactory performance.
- 5.5 If the Customer fails to consider and verify an invoice in a timely fashion the invoice shall be regarded as valid and undisputed for the purpose of paragraph 5.4 after a reasonable time has passed.

- 5.6 If there is a dispute between the Parties as to the amount invoiced, the Customer shall pay the undisputed amount. The Supplier shall not suspend the supply of the Services unless the Supplier is entitled to terminate the Agreement for a failure to pay undisputed sums in accordance with clause 16.4. Any disputed amounts shall be resolved through the dispute resolution procedure detailed in clause 19.
- 5.7 If a payment of an undisputed amount is not made by the Customer by the due date, then the Customer shall pay the Supplier interest at the interest rate specified in the Late Payment of Commercial Debts (Interest) Act 1998.
- 5.8 Where the Supplier enters into a sub-contract, the Supplier shall include in that sub-contract:
- 5.8.1 provisions having the same effects as clauses 5.3 to 5.7 of this Agreement; and
 - 5.8.2 a provision requiring the counterparty to that sub-contract to include in any sub-contract which it awards provisions having the same effect as 5.3 to 5.8 of this Agreement.
 - 5.8.3 In this clause 5.8, "sub-contract" means a contract between two or more suppliers, at any stage of remoteness from the Authority in a subcontracting chain, made wholly or substantially for the purpose of performing (or contributing to the performance of) the whole or any part of this Agreement.
- 5.9 If any sum of money is recoverable from or payable by the Supplier under the Agreement (including any sum which the Supplier is liable to pay to the Customer in respect of any breach of the Agreement), that sum may be deducted unilaterally by the Customer from any sum then due, or which may come due, to the Supplier under the Agreement or under any other agreement or contract with the Customer. The Supplier shall not be entitled to assert any credit, set-off or counterclaim against the Customer in order to justify withholding payment of any such amount in whole or in part.

6 Premises and equipment

- 6.1 If necessary, the Customer shall provide the Supplier with reasonable access at reasonable times to its premises for the purpose of supplying the Services. All equipment, tools and vehicles brought onto the Customer's premises by the Supplier or the Staff shall be at the Supplier's risk.
- 6.2 If the Supplier supplies all or any of the Services at or from the Customer's premises, on completion of the Services or termination or expiry of the Agreement (whichever is the earlier) the Supplier shall vacate the Customer's premises, remove the Supplier's plant, equipment and unused materials and all rubbish arising out of the provision of the Services and leave the Customer's premises in a clean, safe and tidy condition. The Supplier shall be solely responsible for making good any damage to the Customer's premises or any objects contained on the Customer's premises which is caused by the Supplier or any Staff, other than fair wear and tear.
- 6.3 If the Supplier supplies all or any of the Services at or from its premises or the premises of a third party, the Customer may, during normal business hours and on reasonable notice, inspect and examine the manner in which the relevant Services are supplied at or from the relevant premises.
- 6.4 The Customer shall be responsible for maintaining the security of its premises in accordance with its standard security requirements. While on the Customer's premises the Supplier shall, and shall procure that all Staff shall, comply with all the Customer's security requirements.
- 6.5 Where all or any of the Services are supplied from the Supplier's premises, the Supplier shall, at its own cost, comply with all security requirements specified by the Customer in writing.

- 6.6 Without prejudice to clause 3.2.6, any equipment provided by the Customer for the purposes of the Agreement shall remain the property of the Customer and shall be used by the Supplier and the Staff only for the purpose of carrying out the Agreement. Such equipment shall be returned promptly to the Customer on expiry or termination of the Agreement.
- 6.7 The Supplier shall reimburse the Customer for any loss or damage to the equipment (other than deterioration resulting from normal and proper use) caused by the Supplier or any Staff. Equipment supplied by the Customer shall be deemed to be in a good condition when received by the Supplier or relevant Staff unless the Customer is notified otherwise in writing within 5 Working Days.

7 Staff and Key Personnel

- 7.1 If the Customer reasonably believes that any of the Staff are unsuitable to undertake work in respect of the Agreement, it may, by giving written notice to the Supplier:
- 7.1.1 refuse admission to the relevant person(s) to the Customer's premises;
 - 7.1.2 direct the Supplier to end the involvement in the provision of the Services of the relevant person(s); and/or
 - 7.1.3 require that the Supplier replace any person removed under this clause with another suitably qualified person and procure that any security pass issued by the Customer to the person removed is surrendered,
- and the Supplier shall comply with any such notice.
- 7.2 The Supplier shall:
- 7.2.1 ensure that all Staff are vetted in accordance with the Staff Vetting Procedures;
 - 7.2.2 if requested, provide the Customer with a list of the names (and any other relevant information subject to the rights of the applicable individuals) of all persons who may require admission to the Customer's premises in connection with the Agreement; and
 - 7.2.3 procure that all Staff comply with any rules, regulations and requirements reasonably specified by the Customer.
- 7.3 Any Key Personnel shall not be released from supplying the Services without the agreement of the Customer, except by reason of long-term sickness, maternity leave, paternity leave, termination of employment or other extenuating circumstances.
- 7.4 Any replacements to the Key Personnel shall be subject to the prior written agreement of the Customer (not to be unreasonably withheld). Such replacements shall be of at least equal status or of equivalent experience and skills to the Key Personnel being replaced and be suitable for the responsibilities of that person in relation to the Services.

8 Assignment and sub-contracting

- 8.1 The Supplier shall not without the written consent of the Customer assign, sub-contract, novate or in any way dispose of the benefit and/ or the burden of the Agreement or any part of the Agreement. The Customer may, in the granting of such consent, provide for additional terms and conditions relating to such assignment, sub-contract, novation or disposal. The Supplier shall be responsible for the acts and omissions of its sub-contractors as though those acts and omissions were its own.
- 8.2 Where the Customer has consented to the placing of sub-contracts, the Supplier shall, at the request of the Customer, send copies of each sub-contract, to the Customer as soon as is reasonably practicable.
- 8.3 The Customer may assign, novate, or otherwise dispose of its rights and obligations under the Agreement without the consent of the Supplier provided that such assignment, novation or disposal shall not increase the burden of the Supplier's obligations under the Agreement.

9 Intellectual Property Rights

- 9.1 All intellectual property rights in any materials provided by the Customer to the Supplier for the purposes of this Agreement shall remain the property of the Customer but the Customer hereby grants the Supplier a royalty-free, non-exclusive and non-transferable licence to use such materials as required until termination or expiry of the Agreement for the sole purpose of enabling the Supplier to perform its obligations under the Agreement.
- 9.2 All intellectual property rights in any materials created or developed by the Supplier pursuant to the Agreement or arising as a result of the provision of the Services shall vest in the Supplier. If, and to the extent, that any intellectual property rights in such materials vest in the Customer by operation of law, the Customer hereby assigns to the Supplier by way of a present assignment of future rights that shall take place immediately on the coming into existence of any such intellectual property rights all its intellectual property rights in such materials (with full title guarantee and free from all third party rights).
- 9.3 The Supplier hereby grants the Customer:
- 9.3.1 a perpetual, royalty-free, irrevocable, non-exclusive licence (with a right to sub-license) to use all intellectual property rights in the materials created or developed pursuant to the Agreement and any intellectual property rights arising as a result of the provision of the Services; and
- 9.3.2 a perpetual, royalty-free, irrevocable and non-exclusive licence (with a right to sub-license) to use:
- (a) any intellectual property rights vested in or licensed to the Supplier on the date of the Agreement; and
- (b) any intellectual property rights created during the Term but which are neither created or developed pursuant to the Agreement nor arise as a result of the provision of the Services,
- including any modifications to or derivative versions of any such intellectual property rights, which the Customer reasonably requires in order to exercise its rights and take the benefit of the Agreement including the Services provided.
- 9.4 The Supplier shall indemnify, and keep indemnified, the Customer in full against all costs, expenses, damages and losses (whether direct or indirect), including any interest, penalties, and reasonable legal and other professional fees awarded against or incurred or paid by the Customer as a result of or in connection with any claim made against the Customer for actual or alleged infringement of a third party's intellectual property arising out of, or in connection with, the supply or use of the Services, to the extent that the claim is attributable to the acts or omission of the Supplier or any Staff.

10 Governance and Records

- 10.1 The Supplier shall:
- 10.1.1 attend progress meetings with the Customer at the frequency and times specified by the Customer and shall ensure that its representatives are suitably qualified to attend such meetings; and
- 10.1.2 submit progress reports to the Customer at the times and in the format specified by the Customer.
- 10.2 The Supplier shall keep and maintain until 6 years after the end of the Agreement, or as long a period as may be agreed between the Parties, full and accurate records of the Agreement including the Services supplied under it and all payments made by the Customer. The Supplier shall on request afford the Customer or the Customer's representatives such access

to those records as may be reasonably requested by the Customer in connection with the Agreement.

11 Confidentiality, Transparency and Publicity

11.1 Subject to clause 11.2, each Party shall:

11.1.1 treat all Confidential Information it receives as confidential, safeguard it accordingly and not disclose it to any other person without the prior written permission of the disclosing Party; and

11.1.2 not use or exploit the disclosing Party's Confidential Information in any way except for the purposes anticipated under the Agreement.

11.2 Notwithstanding clause 11.1, a Party may disclose Confidential Information which it receives from the other Party:

11.2.1 where disclosure is required by applicable law or by a court of competent jurisdiction;

11.2.2 to its auditors or for the purposes of regulatory requirements;

11.2.3 on a confidential basis, to its professional advisers;

11.2.4 to the Serious Fraud Office where the Party has reasonable grounds to believe that the other Party is involved in activity that may constitute a criminal offence under the Bribery Act 2010;

11.2.5 where the receiving Party is the Supplier, to the Staff on a need to know basis to enable performance of the Supplier's obligations under the Agreement provided that the Supplier shall procure that any Staff to whom it discloses Confidential Information pursuant to this clause 11.2.5 shall observe the Supplier's confidentiality obligations under the Agreement; and

11.2.6 where the receiving Party is the Customer:

(a) on a confidential basis to the employees, agents, consultants and contractors of the Customer;

(b) on a confidential basis to any other Central Government Body, any successor body to a Central Government Body or any company to which the Customer transfers or proposes to transfer all or any part of its business;

(c) to the extent that the Customer (acting reasonably) deems disclosure necessary or appropriate in the course of carrying out its public functions; or

(d) in accordance with clause 12.

and for the purposes of the foregoing, references to disclosure on a confidential basis shall mean disclosure subject to a confidentiality agreement or arrangement containing terms no less stringent than those placed on the Customer under this clause 11.

11.3 The Parties acknowledge that, except for any information which is exempt from disclosure in accordance with the provisions of the FOIA, the content of the Agreement is not Confidential Information and the Supplier hereby gives its consent for the Customer to publish this Agreement in its entirety to the general public (but with any information that is exempt from disclosure in accordance with the FOIA redacted) including any changes to the Agreement agreed from time to time. The Customer may consult with the Supplier to inform its decision regarding any redactions but shall have the final decision in its absolute discretion whether any of the content of the Agreement is exempt from disclosure in accordance with the provisions of

the FOIA.

- 11.4 The Supplier shall not, and shall take reasonable steps to ensure that the Staff shall not, make any press announcement or publicise the Agreement or any part of the Agreement in any way, except with the prior written consent of the Customer.
- 11.5 The Services will form part of the carrying out of the not for profit research aims of the Supplier, that is to improve policy and decision making through research and analysis. There must therefore be some element of public benefit arising from the Services, and this is secured through the following sub-clauses.
- 11.5.1 In accordance with normal research practice, all employees, researchers, agents or appointees of the Supplier (including those who work on the Services) shall be permitted:-
- (a) following the procedures laid down in Clause 11.6, to publish results, obtained during the course of work undertaken as part of the Services; and
 - (b) in pursuance of the Supplier's research functions, to discuss work undertaken as part of the Services in internal seminars and to give instruction within their organisation on questions related to such work.
- 11.6 The Supplier will use all reasonable endeavours to submit material intended for publication to the Customer in writing not less than thirty (30) days in advance of the submission for publication. The Supplier may be required to delay submission for publication if in the Customer's opinion such delay is necessary in order for the Customer to recommend that the Supplier patent or similar protection for material in respect of which it is entitled to seek protection, or to modify the publication in order to protect Confidential Information. A delay imposed on submission for publication as a result of a requirement made by the Customer shall not last longer than is absolutely necessary to seek the required protection; and therefore shall not exceed three (3) months from the date of receipt of the material by the Customer, although the Supplier will not unreasonably refuse a request from the Customer for additional delay in the event that property rights would otherwise be lost. Notification of the requirement for delay in submission for publication must be received by the Supplier within thirty (30) days after the receipt of the material by the Customer, failing which the Supplier shall be free to assume that the Customer has no objection to the proposed publication.
- 12 11.7 The provisions of Clause 4.5 shall survive for a period of one year from the date of termination of this Agreement. **Freedom of Information**
- 12.1 The Supplier acknowledges that the Customer is subject to the requirements of the FOIA and the Environmental Information Regulations 2004 and shall:
- 12.1.1 provide all necessary assistance and cooperation as reasonably requested by the Customer to enable the Customer to comply with its obligations under the FOIA and the Environmental Information Regulations 2004;
 - 12.1.2 transfer to the Customer all Requests for Information relating to this Agreement that it receives as soon as practicable and in any event within 2 Working Days of receipt;
 - 12.1.3 provide the Customer with a copy of all Information belonging to the Customer requested in the Request for Information which is in its possession or control in the form that the Customer requires within 5 Working Days (or such other period as the Customer may reasonably specify) of the Customer's request for such Information; and
 - 12.1.4 not respond directly to a Request for Information unless authorised in writing to do so by the Customer.
- 12.2 The Supplier acknowledges that the Customer may be required under the FOIA and the

Environmental Information Regulations 2004 to disclose Information concerning the Supplier or the Services (including commercially sensitive information) without consulting or obtaining consent from the Supplier. In these circumstances the Customer shall, in accordance with any relevant guidance issued under the FOIA, take reasonable steps, where appropriate, to give the Supplier advance notice, or failing that, to draw the disclosure to the Supplier's attention after any such disclosure.

- 12.3 Notwithstanding any other provision in the Agreement, the Customer shall be responsible for determining in its absolute discretion whether any Information relating to the Supplier or the Services is exempt from disclosure in accordance with the FOIA and/or the Environmental Information Regulations 2004.

13 Protection of Personal Data and Security of Data

- 13.1 The Supplier shall, and shall procure that all Staff shall, comply with any notification requirements under the DPA and both Parties shall duly observe all their obligations under the DPA which arise in connection with the Agreement.

- 13.2 Notwithstanding the general obligation in clause 13.1, where the Supplier is processing Personal Data for the Customer as a data processor (as defined by the DPA) the Supplier shall:

13.2.1 ensure that it has in place appropriate technical and organisational measures to ensure the security of the Personal Data (and to guard against unauthorised or unlawful processing of the Personal Data and against accidental loss or destruction of, or damage to, the Personal Data), as required under the Seventh Data Protection Principle in Schedule 1 to the DPA;

13.2.2 provide the Customer with such information as the Customer may reasonably request to satisfy itself that the Supplier is complying with its obligations under the DPA;

13.2.3 promptly notify the Customer of:

- (a) any breach of the security requirements of the Customer as referred to in clause 13.3; and
- (b) any request for personal data; and

13.2.4 ensure that it does not knowingly or negligently do or omit to do anything which places the Customer in breach of the Customer's obligations under the DPA.

- 13.3 When handling Customer data (whether or not Personal Data), the Supplier shall ensure the security of the data is maintained in line with the security requirements of the Customer as notified to the Supplier from time to time.

14 Liability

- 14.1 The Supplier shall not be responsible for any injury, loss, damage, cost or expense suffered by the Customer if and to the extent that it is caused by the negligence or wilful misconduct of the Customer or by breach by the Customer of its obligations under the Agreement.

- 14.2 Subject always to clauses 14.3 and 14.4:

14.2.1 the aggregate liability of the Supplier in respect of all defaults, claims, losses or damages howsoever caused, whether arising from breach of the Agreement, the supply or failure to supply of the Services, misrepresentation (whether tortious or statutory), tort (including negligence), breach of statutory duty or otherwise shall in no event exceed a sum equal to 125% of the Charges paid or payable to the Supplier; and

14.2.2 except in the case of claims arising under clauses 9.4 and 18.3, in no event shall the

Supplier be liable to the Customer for any:

- (a) loss of profits;
- (b) loss of business;
- (c) loss of revenue;
- (d) loss of or damage to goodwill;
- (e) loss of savings (whether anticipated or otherwise); and/or
- (f) any indirect, special or consequential loss or damage.

14.3 Nothing in the Agreement shall be construed to limit or exclude either Party's liability for:

- 14.3.1 death or personal injury caused by its negligence or that of its Staff;
- 14.3.2 fraud or fraudulent misrepresentation by it or that of its Staff; or
- 14.3.3 any other matter which, by law, may not be excluded or limited.

14.4 The Supplier's liability under the indemnity in clause 9.4 and 18.3 shall be unlimited.

15 Force Majeure

Neither Party shall have any liability under or be deemed to be in breach of the Agreement for any delays or failures in performance of the Agreement which result from circumstances beyond the reasonable control of the Party affected. Each Party shall promptly notify the other Party in writing when such circumstances cause a delay or failure in performance and when they cease to do so. If such circumstances continue for a continuous period of more than two months, either Party may terminate the Agreement by written notice to the other Party.

16 Termination

16.1 The Customer may terminate the Agreement at any time by notice in writing to the Supplier to take effect on any date falling at least 1 month (or, if the Agreement is less than 3 months in duration, at least 10 Working Days) later than the date of service of the relevant notice.

16.2 Without prejudice to any other right or remedy it might have, the Customer may terminate the Agreement by written notice to the Supplier with immediate effect if the Supplier:

- 16.2.1 (without prejudice to clause 16.2.5), is in material breach of any obligation under the Agreement which is not capable of remedy;
- 16.2.2 repeatedly breaches any of the terms and conditions of the Agreement in such a manner as to reasonably justify the opinion that its conduct is inconsistent with it having the intention or ability to give effect to the terms and conditions of the Agreement;
- 16.2.3 is in material breach of any obligation which is capable of remedy, and that breach is not remedied within 30 days of the Supplier receiving notice specifying the breach and requiring it to be remedied;
- 16.2.4 undergoes a change of control within the meaning of section 416 of the Income and Corporation Taxes Act 1988;
- 16.2.5 breaches any of the provisions of clauses 7.2, 11, 12, 13 and 17;
- 16.2.6 becomes insolvent, or if an order is made or a resolution is passed for the winding up of the Supplier (other than voluntarily for the purpose of solvent amalgamation or reconstruction), or if an administrator or administrative receiver is appointed in respect of the whole or any part of the Supplier's assets or business, or if the Supplier makes any composition with its creditors or takes or suffers any similar or analogous action (to any of the actions detailed in this clause 16.2.6) in consequence of debt in any jurisdiction; or

16.2.7 fails to comply with legal obligations in the fields of environmental, social or labour law.

16.3 The Supplier shall notify the Customer as soon as practicable of any change of control as referred to in clause 16.2.4 or any potential such change of control.

16.4 The Supplier may terminate the Agreement by written notice to the Customer if the Customer has not paid any undisputed amounts within 90 days of them falling due.

16.5 Termination or expiry of the Agreement shall be without prejudice to the rights of either Party accrued prior to termination or expiry and shall not affect the continuing rights of the Parties under this clause and clauses 2, 3.2, 6.1, 6.2, 6.6, 6.7, 7, 9, 10.2, 11, 12, 13, 14, 16.6, 17.4, 18.3, 19 and 20.7 or any other provision of the Agreement that either expressly or by implication has effect after termination.

16.6 Upon termination or expiry of the Agreement, the Supplier shall:

16.6.1 give all reasonable assistance to the Customer and any incoming supplier of the Services; and

16.6.2 return all requested documents, information and data to the Customer as soon as reasonably practicable.

17 Compliance

17.1 The Supplier shall promptly notify the Customer of any health and safety hazards which may arise in connection with the performance of its obligations under the Agreement. The Customer shall promptly notify the Supplier of any health and safety hazards which may exist or arise at the Customer's premises and which may affect the Supplier in the performance of its obligations under the Agreement.

17.2 The Supplier shall:

17.2.1 comply with all the Customer's health and safety measures while on the Customer's premises; and

17.2.2 notify the Customer immediately in the event of any incident occurring in the performance of its obligations under the Agreement on the Customer's premises where that incident causes any personal injury or damage to property which could give rise to personal injury.

17.3 The Supplier shall:

17.3.1 perform its obligations under the Agreement in accordance with all applicable equality Law and the Customer's equality and diversity policy as provided to the Supplier from time to time; and

17.3.2 take all reasonable steps to secure the observance of clause 17.3.1 by all Staff.

17.4 The Supplier shall supply the Services in accordance with the Customer's environmental policy as provided to the Supplier from time to time.

17.5 The Supplier shall comply with, and shall ensure that its Staff shall comply with, the provisions of:

17.5.1 the Official Secrets Acts 1911 to 1989; and

17.5.2 section 182 of the Finance Act 1989.

18 Prevention of Fraud and Corruption

18.1 The Supplier shall not offer, give, or agree to give anything, to any person an inducement or reward for doing, refraining from doing, or for having done or refrained from doing, any act in

relation to the obtaining or execution of the Agreement or for showing or refraining from showing favour or disfavour to any person in relation to the Agreement.

18.2 The Supplier shall take all reasonable steps, in accordance with good industry practice, to prevent fraud by the Staff and the Supplier (including its shareholders, members and directors) in connection with the Agreement and shall notify the Customer immediately if it has reason to suspect that any fraud has occurred or is occurring or is likely to occur.

18.3 If the Supplier or the Staff engages in conduct prohibited by clause 18.1 or commits fraud in relation to the Agreement or any other contract with the Crown (including the Customer) the Customer may:

18.3.1 terminate the Agreement and recover from the Supplier the amount of any loss suffered by the Customer resulting from the termination, including the cost reasonably incurred by the Customer of making other arrangements for the supply of the Services and any additional expenditure incurred by the Customer throughout the remainder of the Agreement; or

18.3.2 recover in full from the Supplier any other loss sustained by the Customer in consequence of any breach of this clause.

19 Dispute Resolution

19.1 The Parties shall attempt in good faith to negotiate a settlement to any dispute between them arising out of or in connection with the Agreement and such efforts shall involve the escalation of the dispute to an appropriately senior representative of each Party.

19.2 If the dispute cannot be resolved by the Parties within one month of being escalated as referred to in clause 19.1, the dispute may by agreement between the Parties be referred to a neutral adviser or mediator (the "**Mediator**") chosen by agreement between the Parties. All negotiations connected with the dispute shall be conducted in confidence and without prejudice to the rights of the Parties in any further proceedings.

19.3 If the Parties fail to appoint a Mediator within one month, or fail to enter into a written agreement resolving the dispute within one month of the Mediator being appointed, either Party may exercise any remedy it has under applicable law.

20 General

20.1 Each of the Parties represents and warrants to the other that it has full capacity and authority, and all necessary consents, licences and permissions to enter into and perform its obligations under the Agreement, and that the Agreement is executed by its duly authorised representative.

20.2 A person who is not a party to the Agreement shall have no right to enforce any of its provisions which, expressly or by implication, confer a benefit on him, without the prior written agreement of the Parties.

20.3 The Agreement cannot be varied except in writing signed by a duly authorised representative of both the Parties.

20.4 The Agreement contains the whole agreement between the Parties and supersedes and replaces any prior written or oral agreements, representations or understandings between them. The Parties confirm that they have not entered into the Agreement on the basis of any representation that is not expressly incorporated into the Agreement. Nothing in this clause shall exclude liability for fraud or fraudulent misrepresentation.

20.5 Any waiver or relaxation either partly, or wholly of any of the terms and conditions of the Agreement shall be valid only if it is communicated to the other Party in writing and expressly

stated to be a waiver. A waiver of any right or remedy arising from a breach of contract shall not constitute a waiver of any right or remedy arising from any other breach of the Agreement.

- 20.6 The Agreement shall not constitute or imply any partnership, joint venture, agency, fiduciary relationship or other relationship between the Parties other than the contractual relationship expressly provided for in the Agreement. Neither Party shall have, nor represent that it has, any authority to make any commitments on the other Party's behalf.
- 20.7 Except as otherwise expressly provided by the Agreement, all remedies available to either Party for breach of the Agreement (whether under the Agreement, statute or common law) are cumulative and may be exercised concurrently or separately, and the exercise of one remedy shall not be deemed an election of such remedy to the exclusion of other remedies.
- 20.8 If any provision of the Agreement is prohibited by law or judged by a court to be unlawful, void or unenforceable, the provision shall, to the extent required, be severed from the Agreement and rendered ineffective as far as possible without modifying the remaining provisions of the Agreement, and shall not in any way affect any other circumstances of or the validity or enforcement of the Agreement.

21 Notices

- 21.1 Any notice to be given under the Agreement shall be in writing and may be served by personal delivery, first class recorded or, subject to clause 21.3, e-mail to the address of the relevant Party set out in the Award Letter, or such other address as that Party may from time to time notify to the other Party in accordance with this clause:
- 21.2 Notices served as above shall be deemed served on the Working Day of delivery provided delivery is before 5.00pm on a Working Day. Otherwise delivery shall be deemed to occur on the next Working Day. An email shall be deemed delivered when sent unless an error message is received.
- 21.3 Notices under clauses 15 (Force Majeure) and 16 (Termination) may be served by email only if the original notice is then sent to the recipient by personal delivery or recorded delivery in the manner set out in clause 21.1.

22 Governing Law and Jurisdiction

The validity, construction and performance of the Agreement, and all contractual and non contractual matters arising out of it, shall be governed by English law and shall be subject to the exclusive jurisdiction of the English courts to which the Parties submit.

Annex 2 Specification

GENERAL INTRODUCTION

The Food Standards Agency is a non-ministerial government department governed by a Board appointed to act in the public interest, with the task of protecting consumers in relation to food. It covers England, Wales and Northern Ireland and has offices in London, Cardiff, Belfast and York.

The Agency is committed to openness, transparency and equality of treatment to all suppliers. For science projects the final project report will be published on the Food Standards Agency website (www.food.gov.uk), and we encourage contractors to publish their work in peer reviewed scientific publications wherever possible.

In line with the Government's Transparency Agenda which aims to encourage more open access to data held by government, the Agency is developing a policy on the release of underpinning data from all of its science- and evidence-gathering projects. Underpinning data should also be published in an open, accessible, and re-usable format, such that the data can be made available to future researchers and the maximum benefit is derived from it. The Agency has established the key principles for release of underpinning data that will be applied to all new science- and evidence-gathering projects which we would expect contractors to comply with. These can be found at <http://www.food.gov.uk/about-us/data-and-policies/underpinning-data>.

This study will gather, synthesise and analyse evidence and insights on global food system risks to 2030 from existing studies, reports and scans and draw out the key issues and their implications for the UK and for food safety and authenticity.

This work is being commissioned through the FSA Chief Scientific Adviser's Strategic Evidence Fund which aims to develop strategic insight, understanding and capability to understand longer-term risks and opportunities to build FSA resilience and its ability to harness innovation.

A. THE SPECIFICATION

Introduction

The FSA wishes to develop its approach to identifying risks and issues across the food system. Our current and developing approaches to surveillance and horizon scanning provide us with some capabilities to identify specific new and emerging risks in the near- and medium-term. But they do not, on their own, deliver an informed and integrated view of the global food system and of systemic risks and issues over the next five to ten years. The development of such a capability is a medium-term objective and will support development of FSA's future strategy and contribute to our ambition of being an excellent, accountable and modern regulator.

The FSA has tasked its new Science Council to advise on '*What should the FSA do to improve its horizon scanning and its understanding of global food systems risks (and opportunities)?*'

In order to inform the Council's advice we are commissioning this study to gather, synthesise and analyse evidence and insights on global food system risks from existing studies, reports, scans and insights and to draw out the key issues and their implications for the UK and for food safety and authenticity.

There is a large body of evidence and insights from reports, studies, scans and other materials that consider or have relevance for global food system risks. However these do not always consider or focus on the food system, or consider it as a system; and they may not focus in the evidence or

analysis on the issues and risks of most relevance to the UK and to the FSA (such as food safety and authenticity and their regulation, or impacts for and perspectives of UK consumers).

Further, while the existing body of work is extensive, little has emerged to guide the application of systems approaches/network science to the evaluation and management of food risks. There may be opportunities to apply learnings from other sectors to provide insights on the food system, food safety or its regulation (e.g. from finance, economics, other regulatory domains).

Further background to the FSA's ambitions in this area and the Science Council's role are set out in a paper for the FSA Board meeting in June 2017¹.

The Specification

Tenders are invited to carry out a desk-based study, and to participate in a workshop with the Science Council and relevant experts and stakeholders which will further elaborate the key issues and the implications for FSA, based on the study's findings.

Part 1: Desk study and production of evidence report

The study will identify, synthesise and analyse evidence and insights from existing reports, studies, scans and other materials. It is not expected to include original primary research (but if the contractor has carried out such research they can draw on evidence or insights from that work).

The study should include relevant published and unpublished work. Applicants will need to set out their approach to identifying and accessing relevant materials, as well as to assessing their relevance and quality, and the confidence with which conclusions may be drawn from them with regard to FSA's areas of interest. They will also need to set out how they will identify and assess issues and their relevance to the UK and to food safety and authenticity.

The principal output will be a report to the Agency that will include the following:

- (i). A short executive summary setting out the key findings, conclusions and recommendations.
- (ii). An explanation of how sources were identified and which were used (and not used) and why, where possible providing links to original material.
- (iii). An assessment of the relevance, strength and quality of its sources and the confidence which can be placed on their findings and on the conclusions which can be drawn from them with regard to the implications for the UK and for food safety and authenticity.
- (iv). A reasoned, evidenced assessment that identifies the key drivers in the global food system, the potential trends, changes or risks in the system, and the main implications of these drivers, changes and risks for the UK, focusing on implications for food safety and authenticity and their regulation, and impacts on and perspectives of UK consumers. This assessment should reflect what the evidence allows us to conclude with regard to the likelihood, plausibility or (un)certainly of these changes occurring (and to what timescale). It should include issues or impacts which may be unlikely or highly uncertain but which would have a significant impact should they occur.

The analysis should provide among other things a response to these questions:

1. *What are they key novel or emergent features of the potential future food system to 2030?*
2. *Which potential features, changes, trends or dynamics in the system have the most significance for the UK and why?*

¹ <https://www.food.gov.uk/sites/default/files/fsa170606.pdf>

3. *What are the main challenges and opportunities relating to food safety and authenticity in response to the issues identified in Q1 and Q2?*
4. *What sources of evidence can the FSA draw on to better understand, prioritise and respond to these issues?*
5. *What approaches and inputs could FSA have access to in order to implement an ongoing capability for horizon scanning and foresight?*

The final report will be 30-40 pages long (excluding annexes) and will be circulated in draft to a range of key experts and stakeholders in FSA and externally for peer review and to help identify and additional sources, insights. The FSA will identify these contacts and provide support for this consultation process. The contractor will then produce a final report, drawing on this input, by the end of month four.

Part 2. Participation in expert workshop to elaborate implications and recommendations for FSA

The successful contractor will participate in a one-day workshop with members of the FSA Science Council and relevant experts and stakeholders. This workshop will discuss the key issues and implications identified in the desk study report and elaborate possible actions and recommended actions for the FSA, based on the study's findings. The contractor will need to participate in fully in the workshop.

The FSA will organise the workshop and write up its outcomes, working with the Science Council, but we will expect the contractor to contribute ideas to the planning of the workshop in order to identify useful inputs and maximise useful outputs from the discussion.

Other inputs

The successful contractor will work closely with the Science Council Chair (Professor Sandy Thomas), the Chair of the Council's Working Group on horizon scanning (Professor John O'Brien) particularly in the early stage of the project, to develop the detail of the material to be sourced and used and of the approach. The contractor will also need to work with the independent peer reviewer(s) who will be identified by FSA to provide commentary on the draft report. Your tender and timeline should reflect this.

Outline of expected timeline

Submission of draft report	by end month 2
Iteration to refine draft report	Month 3
Submission of final report	Mid-month 4
Participation in workshop	Month 4 or 5
Finish	By end month 5

If you believe a longer timescale is needed or can be justified in terms of producing a more robust and useful report, you can outline this as an alternative option but in any case this should complete in no more than six months.

Annex 3 Suppliers Technical Proposal

LEAD APPLICANT'S DETAILS					
Surname	Smith	First Name	Elta	Initial	Title Dr
Organisation	RAND Europe	Department	Innovation, Health and Science		
Street Address	Westbrook Centre, Milton Road				
Town/City	Cambridge	Country	UK	Postcode	CB4 1YG
Telephone No	+44 1223 353 329 x2567	E-mail Address	<u>eltas@rand.org</u>		
Is your organisation is a small and medium enterprise . (EU recommendation 2003/361/EC refers http://www.hmrc.gov.uk/manuals/cirdmanual/cird92800.htm)		Yes		No	
TENDER SUMMARY					
TENDER TITLE					
Insights on global food system risks and their implications for FSA					
TENDER REFERENCE	FS301042				
PROPOSED START	31 December 2017	PROPOSED END	31 May 2018		
1: TENDER SUMMARY AND OBJECTIVES					
A.	TENDER SUMMARY				
Please give a brief summary of the proposed work in no more than 400 words.					
<p>FSA need a long-term perspective on the global food system in order to meet its needs to anticipate and respond to risks and opportunities that may affect the activities within FSA's remit and the agency's overall impact on a UK food system that is safe and authentic and where consumers have access to an affordable, healthy diet as well the information they require to make informed food choices.</p> <p>This longer-term perspective can be achieved through a foresight approach, which keeps as its main focus the policy relevance of the exercise in relation to FSA's needs. RAND Europe is a leader in applying innovative, bespoke foresight and related horizon-scanning techniques to policy problems. Indeed, RAND's particular expertise is in applying a policy-relevant lens to futures analysis.</p> <p>Our proposed approach is based on the principle that the foresight and horizon scanning exercises undertaken for this study must be framed from the outset both in terms of the wider global food system context and in relation to the specific aims and remit of the FSA. Moreover, the risks and opportunities identified through these activities should always be considered in relation to their policy relevance and prioritised in line with FSA's needs and objectives.</p> <p>Thus for this study, we have taken a core prioritisation approach pioneered at RAND (i.e. the STREAM methodology) and combined it with a Three Horizons foresight method, which we have used and further developed over time. The approach proposed here is bespoke to meet FSA's specific objectives, but built on the basis of tried and tested approaches developed and used extensively at RAND.</p> <p>We see the exercise undertaken for this study as establishing the baseline for FSA's potential future foresight and horizon scanning work. It is designed to operate as a test of an approach that FSA could implement to enable ongoing capabilities in this area and compare to other approaches that may be used. The study will conclude with an evaluation of this exercise and an assessment of its ability to serve this function and compared to other approaches that could be used.</p>					

B. OBJECTIVES AND RELEVANCE OF THE PROPOSED WORK TO THE FSA TENDER

OBJECTIVES

Please detail how your proposed work can assist the agency in meeting its stated objectives and policy needs. Please number the objectives and add a short description. Please add more lines as necessary.

OBJECTIVE NUMBER	OBJECTIVE DESCRIPTION
1	Framing: Develop an informed and integrated view of the global food system for agreement with FSA and to robustly underpin the subsequent steps
2	Scanning: Identify specific novel and emergent food system risks and opportunities
3	Prioritisation: Establish risks and opportunities of particular relevance to FSA to 2030
4	Translation: Assess the potential approaches FSA could take to implement ongoing foresight capability

2: DESCRIPTION OF APPROACH/SCOPE OF WORK

A. APPROACH/SCOPE OF WORK

Please describe how you will meet our specification and summarise how you will deliver your solution. You must explain the approach for the proposed work. Describe and justify the approach, methodology and study design, where applicable, that will be used to address the specific requirements and realise the objectives outlined above. Where relevant (e.g. for an analytical survey), please also provide details of the sampling plan.

Three baseline principles underpin our approach:

First, the foresight and related horizon scanning techniques applied in this study should be framed from the outset in terms of the global food system context and in relation to the specific aims and remit of FSA.

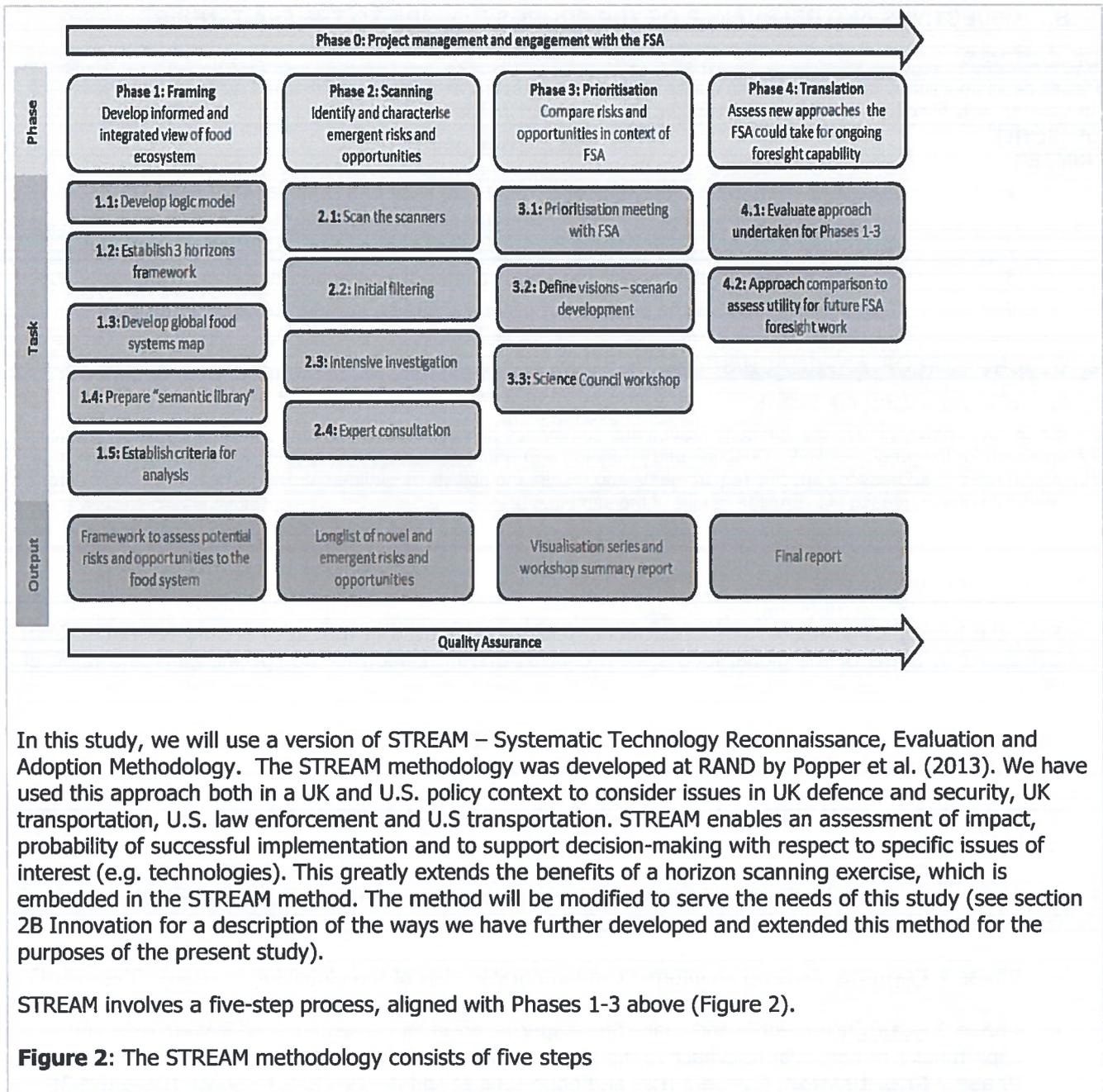
Second, risks and opportunities identified through these techniques should always be considered and ultimately prioritised in line with FSA's needs and objectives.

Third, the study itself should set a baseline for a future approach that FSA could take to its ongoing future foresight needs.

Together, this set of principles translates into a four-part structure to the study approach, which aligns with the four study objectives set out in section 1B (Figure 1):

- **Phase 1 Framing:** Develop an informed and integrated view of the global food system (Objective 1)
- **Phase 2 Scanning:** Identify and characterise specific novel and emergent food system risks and opportunities of particular relevance to the UK and FSA to 2030 (Objective 2)
- **Phase 3 Prioritisation:** Compare risks and opportunities and decide FSA's response (Objective 3)
- **Phase 4 Translation:** Assess the potential approaches FSA could take to implement ongoing foresight capability (Objective 4)

Figure 1: We propose a four-part structure to the study, complemented by ongoing project management and QA





Phase 1 will involve the first step in the STREAM method—**framing**, which will be composed of a set of critical framing tasks that together:

- Establish a shared understanding of FSA aims and processes;
- Provide the basis for FSA to establish an integrated view of the global food system that is directly linked to its own needs and objectives;
- Serve to establish the 'semantic library', the assessment criteria, and the understanding of the depth and breadth of sources that will be essential for undertaking the horizon scan in Phase 2; and
- Provide the foundations for future ongoing efforts of FSA.

We propose that these are relatively light-touch but essential activities that will both increase the rigour of the approach and the quality of the outputs from the horizon scanning processes and applicability of the findings to FSA's priorities.

In particular, we propose three discrete activities in Phase 1:

1. **Prepare a logic model** of the FSA to establish precisely the issues of focus for prioritising the results of the horizon scanning work (see Section 3A, Task 1.1). Logic models aim to consider what inputs and processes are needed now in order to get desired outputs and outcomes, or results, in the future. A logic model is a way of articulating a causal pathway by which an organisation

achieves its aims, and identifies outcomes that can be causally linked back to concrete inputs. The logic model of the FSA will later be refined and updated to include the risks and opportunities identified in the horizon scan in Phases 2 and 3. ***The logic model will ensure the priorities of the FSA are woven into the study design from the outset.***

2. **Establish a 'three horizons' framework** (Silberglitt et al 2015) **for considering the time periods of relevance to this study and more generally to FSA's short-, medium-, and long-term foresight needs** (see Section 3A, Task 1.2). The framework will align FSA's existing surveillance, horizon scanning, and related capabilities with its expectations from this longer-term foresight study to ensure that FSA is able to make best use of existing resources, while the approach developed in this study will help to build on these capabilities, fill gaps and extend their potential. ***The framework will clarify the timeframes of relevance and FSA's existing capabilities and gaps to be addressed in this study.***
3. **Develop a systems map for the global food system, which will serve as a tool for understanding and analysing potential risks and opportunities and for improving FSA's approach to addressing these in the future** (see Section 3A, Task 1.3). The mapping tool will form the graphical representation and description of a conceptual framework for analysing the global food system through a 'systems approach', that is, to see the global food system as a complex policy space, characterised by uncertainty, with many interconnected and interdependent features. ***The systems map will provide a rational way to decide which aspects of the 'horizon' to consider.***

Phase 2 will involve steps two (**identify**) and three (**characterise**) of the STREAM method, which is effectively the horizon scanning exercise itself. For the purposes of this study we propose an approach that seeks to **combine both a quantitative analyses of publications and citations** (including direct citation and co-citation) and data mining techniques with **qualitative expert engagement approaches**. Our proposed approach is informed by our experiences of running many horizon scanning exercises for public sector organisations, including Innovate UK, CAST, Dstl, and DG Connect.

Our proposed horizon scanning approach will comprise the following steps:

- **Step 1: A meta-analysis of horizon scanning literature and resources** (see section 3A, Task 2.1) to capture what individuals and organisations consider to be the most interesting developments in science and emerging technologies and novel applications of existing technologies. This will generate a longlist of risks and opportunities to investigate further.
- **Step 2: A scan of news alerts and social media posts** (see section 3A, Task 2.2) related to the themes identified in Phase 1 to record the intensity of discourse surrounding these themes and thereby identify a 'short longlist' of risk and opportunities.
- **Step 3: A literature review of the shorter list of risks and opportunities** (see section 3A, Task 2.3) identified through scanning.
- **Step 4: Expert input** (see section 3A, Task 2.4) to apply a set of judgement criteria that yields quantitative and qualitative assessments of key characteristics of each risk and opportunity, and how each may affect FSA functions and goals. This step will help to ensure we capture the most useful and relevant items for FSA. This step involves selecting those risks and opportunities that will be compared in the next step yielding a shortlist of risks and opportunities that fulfil the assessment criteria defined in Phase 1 based on the longlist of risks and opportunities identified in earlier stages of the horizon scan.

Phase 3 will involve the fourth and fifth steps in the STREAM method (**compare and decide**), that is, a prioritisation process to rank the risks and opportunities of most relevance to the FSA. We propose to carry out the prioritisation exercise during a half-day meeting with FSA and then use a Three Horizons exercise to decide on the most appropriate course of action for each priority risk and opportunity during the Science

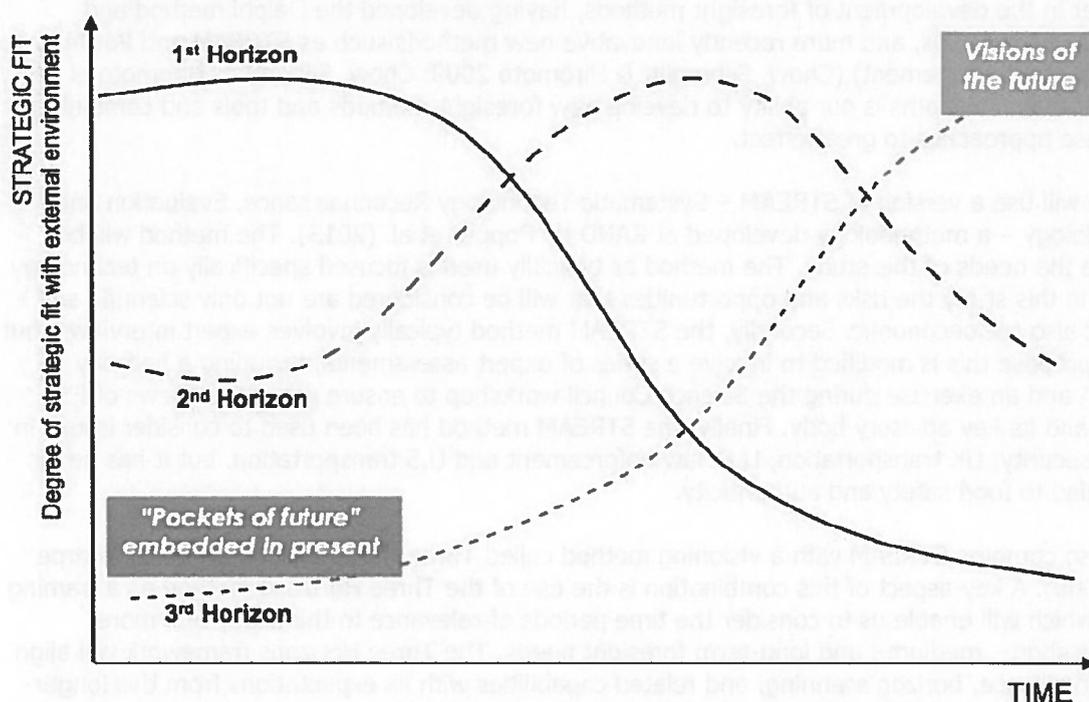
Council workshop.

The 'compare' step will be undertaken with FSA using a series of visualizations and other presentation techniques to compare key characteristics of each risk and opportunity which may have differential effects on FSA functions and goals (see section 3A, Task 3.1). FSA decision makers can use these visualizations, together with the context in which the related technology applications may be used, to examine the trade-offs between alternatives.

The 'decide' step involves a synthesis exercise to determine what the FSA's response should be to risks and opportunities in relation to enhancing agency functions and the ability to achieve mission goals (see section 3A, Tasks 3.2 and 3.3). The decision framework takes into account trade-offs described in the previous step as well as the local context and key constraints. The **Three Horizons visioning method** will be used in this step to **consider alternative future visions, compare them, and analyse how they might occur** by devising scenarios and pathways or trajectories from the present to the future.

The method consists of defining the characteristics of the present as well as future visions, then considering and evaluating pathways from the present to the future and establishing the details of alternative scenarios. **The method involves dividing the present and future into three time horizons** (Figure 3): the First Horizon is the present and near-term future. The Second Horizon is the intermediate time period. The Third Horizon is the envisioned future, which in the case of the FSA study objectives is 10-15 years ahead, or the period up to circa 2030.

Figure 3 Schematic of the Three Horizons Visioning model. Source: Curry and Hodgson (2008)



The fit of First Horizon strategies (e.g. traditional monitoring and surveillance approaches) decreases as the environment in which FSA must operate changes with advances in technology and the evolution of society. This eventually yields to a Third Horizon, which will require a new set of strategies, evolving from the present to the 2030 time period. The Second Horizon is a bridge between the First and Third Horizons and may be captured by existing horizon scanning capabilities in the FSA and elsewhere, whose strategic fit rises and falls in the intermediate time period. The Second Horizon represents a time of conflict resolution between the

many possible pathways to very different Third Horizons— 'pockets' of the future embedded in the present.

The Three Horizons framework will be applied during the Science Council workshop held in the context of this study. Scenarios will be developed and tested in the workshop and this will enable the risks and opportunities to be assessed along possible paths from the present to the year 2030, including drivers and barriers for these paths, and FSA needs to enable desired outcomes or prevent undesirable effects. FSA capabilities will be assessed in relation to these pathways, with a view to establishing the most appropriate tools and techniques to use for capturing possibilities in each time horizon.

Phase 4 will involve an **assessment of the potential to translate the approach undertaken in this study to ensure FSA has ongoing capabilities in horizon scanning and foresight**. The purpose of the STREAM method is to present a plausible basis for making decisions by creating a detailed guide to which the FSA may then refer.

The study will conclude with an analysis of the effectiveness and efficiency of the approach undertaken in this study as a pilot exercise for developing ongoing FSA capabilities in horizon scanning, including its strengths, weaknesses, limitations and learning points from the pilot (see section 3A, Task 4.1). Potential adaptations or alternative approaches will be considered and compared with the results of the study so that FSA can consider its ongoing potential (see section 3A, Task 4.2).

INNOVATION

Please provide details of any aspect of the proposed work which are considered innovative in design and/or application? E.g. Introduction of new or significant improved products, services, methods, processes, markets and forms of organization

RAND is a pioneer in the development of foresight methods, having developed the Delphi method and scenarios analysis in the 1950s, and more recently innovative new methods such as STREAM and PortMan (portfolio analysis and management) (Chow, Silbergliitt & Hiromoto 2009; Chow, Silbergliitt, Hiromoto et al 2008). One of our main strengths is our ability to develop new foresight methods and tools and combining and adapting these approaches to great effect.

In this study, we will use a version of STREAM – Systematic Technology Reconnaissance, Evaluation and Adoption Methodology – a methodology developed at RAND by Popper et al. (2013). The method will be modified to serve the needs of this study. The method as typically used is focused specifically on technology assessment, but in this study the risks and opportunities that will be considered are not only scientific and technological but also socioeconomic. Secondly, the STREAM method typically involves expert interviews, but in this study we propose this is modified to involve a series of expert assessments, including a half-day meeting with FSA and an exercise during the Science Council workshop to ensure we gather views of FSA decision-makers and its key advisory body. Finally, the STREAM method has been used to consider issues in UK defence and security, UK transportation, U.S. law enforcement and U.S transportation, but it has never before been applied to food safety and authenticity.

This study will also combine STREAM with a visioning method called Three Horizons, developed by Sharpe and Hodgson (2006). A key aspect of this combination is the use of the Three Horizons method as a framing tool in Phase 1, which will enable us to consider the time periods of relevance to this study and more generally to FSA's short-, medium-, and long-term foresight needs. The Three Horizons framework will align FSA's existing surveillance, horizon scanning, and related capabilities with its expectations from this longer-term foresight study to ensure that FSA is able to make best use of existing resources, while the approach developed in this study will help to build on these capabilities, fill gaps and extend their potential. As part of Phase 3, the Three Horizons method will be used to test the risks and opportunities offers an advantage on other scenarios work in that it considers the underlying values and assumptions about the possible future scenarios it creates. Importantly, it also encourages participants to consider both important

drivers and weak signals of change, the latter of which are key in detecting potentially disruptive drivers of change.

3: THE PROJECT PLAN AND DELIVERABLES

A. THE PLAN

Please provide a detailed project plan including, the tasks and sub-tasks required to realise the objectives (detailed in Part 1). The tasks should be numbered in the same way as the objectives and should be clearly linked to each of the objectives. Please also attach a flow chart illustrating the proposed plan.

The project plan consists of the four phases described in section 2, as well as ongoing project management and quality assurance (QA) (Section 2A, Figure 1). The phases and their tasks are detailed below.

Phase 0 Project management and engagement with the FSA

Project management is a critical and continuous task in performing the research. From previous experience, project management is an important factor in the successful and timely delivery of work. **We have provided more details on project management in Section 5.**

This study will be led and coordinated by the **Project Leader, Dr Elta Smith**. She will be responsible for the overall coordination of the project team and the direction and conduct of the study. She will be supported in day-to-day aspects of project management by the **Project Manager, Dr Camilla d'Angelo**. The Project Manager will keep track of all work and ensure timely delivery of reports and other deliverables according to the timetable laid out in the Gantt chart (Figure 4). The project manager will also ensure attendance of relevant senior representatives in meetings. RAND Europe has internal quality assurance mechanisms in place to guarantee the rigour of both process and content. **These are explained in more detail in Section 7.**

Figure 4: project Gantt chart

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
FRAMING - PHASE 1																
Task 1.1: Develop logic model																
Task 1.2: Establish Three Horizons Framework																
Task 1.3: Develop global food systems map																
Task 1.4: Prepare 'semantic library'																
Task 1.5: Establish criteria for analysis																
SCANNING - PHASE 2																
Task 2.1: Scan the scanners																
Task 2.2: Initial Filtering																
Task 2.3: Intensive investigation																
Task 2.4: Expert consultation																
PRIORITISATION - PHASE 3																
Task 3.1: Half-day meeting with FSA																
Task 3.2: Scenario development																
Task 3.3: Science Council Workshop																
TRANSLATION - PHASE 4																
Task 4.1: Evaluate approach																
Task 4.2: Compare approaches																
Phase 0: Project management																
Quality Assurance																

A kick-off meeting (M1) will be held with the FSA in London after commencement of the contract. An agenda and supporting documents will be submitted to FSA in advance of the kick-off meeting. In addition, meetings

will be organised at an intermediate stage in the study (M2: 11 weeks after commencement of the contract to discuss progress and undertake the prioritisation exercise (Phase 2, Task 3.1), and following preparation of the draft final report towards the end of the study period (M3: 15 weeks after commencement of the contract).

Phase 1 Framing: Develop an informed and integrated view of the global food system (**Objective 1**)

Task 1.1: Develop logic model

In Task 1.1 we will develop a logic model to link the FSA's policy activities with its mission. The first step will be to review relevant documentation from the FSA as well as other related and relevant organisations.

This process will consist of a review of publicly available materials, as well as relevant strategy documentation and project documentation (e.g. annual reports, project reports, etc.) including any unpublished information that FSA can share with us for this purpose. A first draft of the logic model is provided in Figure 5. It will be adapted and further developed by the study team.

Figure 5: Draft logic model working towards priority impacts highlighted in the FSA Strategic Plan 2015-2

Resources	Activities	Outputs	Outcomes		Impact (FSA Mission)
			Short-term	Long-term	
<i>In order to accomplish our activities, we will draw on the following resources:</i>	<i>In order to address our problem, we will conduct the following activities:</i>	<i>Once completed or underway, our activities will produce the following outputs:</i>	<i>Once completed or ongoing, our activities will lead to the following short-term (1-3 years) and long-term (4-6 years) changes:</i>		<i>Our activities will lead to the following impacts in 7-10 years:</i>
FSA-published guidance on listeria for health and social care organisations	Implement existing plans on known primary threats to food safety	Strictly enforced guidelines on food safety and authenticity at every stage of the UK food chain, from primary production to retail	Reduced incidence of food poisoning	Improved consumer confidence in food safety	Food is safe
FSA-developed risk management programme for campylobacter	Develop and enforce safety and authenticity regulation at every stage of the food chain, from primary production to retail		Stricter monitoring of safety standards in establishments producing and selling food	Businesses taking greater responsibility for ensuring food safety (and authenticity)	
The FSA Food Crime Annual Strategic Assessment (FCASA), first published in 2016	Support the FERA Food Integrity Project to assure quality and authenticity in the EU food chain	Reduced barriers to sharing and utilising data on food integrity in the European agri-economy	Increased risk and severity of sanctions for the production and sale of inauthentic food	A market that is unwelcoming of food products or suppliers with questionable authenticity	Food is what it says it is
Strategic science partnerships, e.g. the Food and Environment Research Agency (FERA)			Earlier detection of fraudulent products and suppliers in the European agri-economy	Reduced threat to the European agri-economy from fraudulently-labelled imitations	
Collaboration with the ESRC on the Global Food Security (GFS) programme	Fund research projects to understand and improve the resilience of the UK food system	Research projects funded and results disseminated	Accelerated development of innovations in food production technology	Increased use of innovative technologies to produce high yields of healthy food at lower cost, which translates into affordable prices for consumers	The public has access to an affordable healthy diet
Public trust and an established link through which to engage with the public	Advocate for the adoption of current and future innovations in food production technology	Publicly available documents detailing the benefits and dispelling the myths	Increased public acceptance of innovations in food production technology		
	Blockchain technology	Disseminate information to the public on food safety, authenticity and nutrition	Publicly available documents on food safety, authenticity and nutrition published	A public that is increasingly engaged with issues of food safety, authenticity and nutrition	
Use blockchain to improve food system transparency and make findings available to consumers		Publicly available documents on food system transparency, fair trade, etc. published	A public that is engaged with issues of food system transparency, fair trade, etc.	A market that is unwelcoming of products associated with unfair production or trading	

There are a number of questions we will consider, including a full understanding of the aims of the FSA, and what is understood by the term 'impact'. This will allow us to determine the most appropriate approach to development of the framework and the range of inputs, activities, outputs and ultimate impacts, including the diversity of outputs and outcomes (e.g. reports and guidelines, better understanding of the food system, safer access to food). This task will be important in order to gain a solid understanding of the full range of specific impacts that the FSA aims to have and what risks to watch out for in regulating for the future.

Task 1.2: Establish three horizons framework

Task 1.2 will involve a review of FSA's short-, medium- and long-term foresight needs and its existing capabilities and access to relevant analysis. We will establish a 'three horizons' framework for this purpose, which will consider FSA capabilities across three timeframes (short-term, intermediate-term and longer-term). This will involve a combination of desk research, alongside the review undertaken in Task 1.1 as well as engagement with FSA to assess:

1. **Immediate and short-term capabilities**, including monitoring and surveillance activities (**1-3 years**);
2. **Intermediate capabilities**, including any existing, but perhaps less-comprehensive or indirectly related horizon scanning activities (**4-6 years**); and
3. **Long-term capabilities**, that is, framing FSA needs against existing capabilities and ensuring that the approach developed for this study is both further-reaching in terms of the time horizon for analysis (**7-10 years+**) and considers gaps in existing capabilities without duplicating existing activities, and how to create a more comprehensive approach that takes a 'whole food system' view.

This task will result in an overview of current capabilities and future needs that will, together with the logic model (Task 1.1) and global food systems map (Task 1.3), provide the framework for the study and the basis for setting up the horizon scanning exercise (Phase 2).

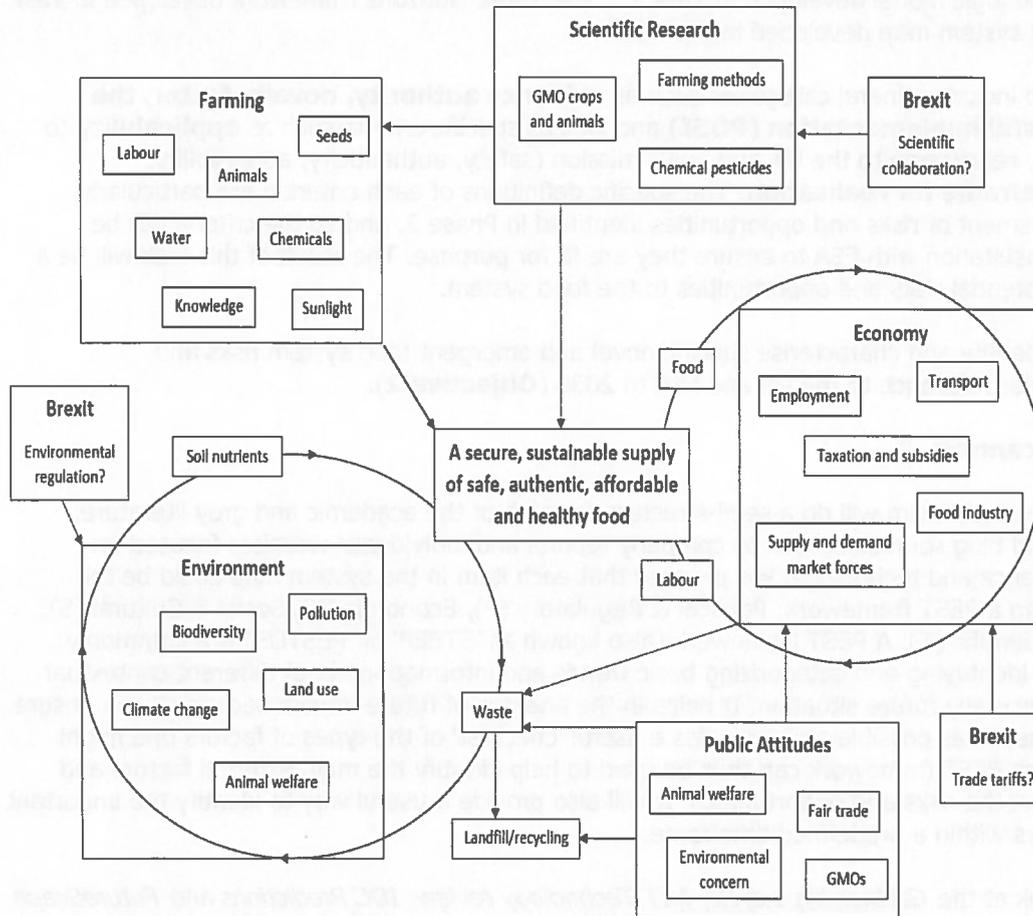
Task 1.3: Develop global food systems map

Mapping of the global food system will allow visualisation of key elements and risks in the food system of relevance to FSA, highlighting challenges such as gaps, bottlenecks, and inefficiencies. Previous application of this technique suggests that it will provide a strategic understanding of FSA's existing ability to absorb risks and seize opportunities.

A 'systems map' will be created to show how different factors influence the food system, which will help contextualise potential risks and opportunities in the later stages of the study. The purpose of this task is to categorise the elements of the food system in order to consider potential risks and opportunities that could affect it. To bound the study it will be important to focus on the risks and opportunities that are important for and actionable by the FSA rather than risks and opportunities that could impact the wider food system outside of the FSA's remit. RAND Europe experts will develop the system map through a document review as well as with advice from the Science Council and the FSA Steering Group. Once the map has been generated, this will be a key reference document for the rest of the study which will enable RAND Europe to calibrate the analysis of current and future risks and opportunities in food safety.

The output of this task will be a map of the global food system. We have developed a draft systems map for this study to illustrate the approach (Figure 6). It will be expanded and extended in Task 1.3 and will constitute an on-going part of the project, with the study team adapting it in line with knowledge gained in subsequent tasks to serve as a final output of the study for FSA's future use.

Figure 6: Draft example of a food systems map



Task 1.4: Prepare the 'semantic library' for the horizon scanning exercise

The first three tasks (Tasks 1.1-Task 1.3) will together provide the basis for establishing a 'semantic library' that will enable the study team to undertake the horizon scanning exercise in Phase 2. The library will consist of a set of themes and related search terms that will enable identification of risks and opportunities that are tuned both to the developments in the global food system but also relevant to FSA's specific needs. We will start focused, and scope wide – starting from a point squarely within the 'food system' and expanding out to related areas. To conduct the search most effectively, we will seek expert input of RAND Knowledge Services on devising the appropriate search strings, search constraints and capture requirements. The library of themes and specific search terms will be used as part of the semi-structured search horizon scanning exercise, Task 2.1. The search will involve manual scanning of websites/aggregators informed by the terms identified in this task.

Task 1.5: Establish criteria for analysis

A key element of the STREAM methodology is the development of assessment criteria for evaluation of potential risks and opportunities. To support the identification of relevant assessment criteria, we will review the objectives and goals of the FSA, using desk research and through discussions with the FSA Steering Group, supported by the logic model developed in Task 1.1, the Three Horizons framework developed in Task 1.2 and the global food system map developed in Task 1.3.

The criteria are likely to include general categories such as **evidence authority**, **novelty factor**, **the possibility of successful implementation (POSI)** and well as specific criteria such as **applicability** to the global food system, **relevance** to the UK and FSA's mission (safety, authenticity, accessibility, transparency) and **timeframe for realisation**. The specific definitions of each criterion are particularly important for the assessment of risks and opportunities identified in Phase 2, and so the criteria will be established in close consultation with FSA to ensure they are fit for purpose. The result of this task will be a framework to assess potential risks and opportunities to the food system.

Phase 2 Scanning: Identify and characterise specific novel and emergent food system risks and opportunities of particular relevance to the UK and FSA to 2030 (**Objective 2**).

Task 2.1: Scan the scanners

As part of this step, the study team will do a semi-structured search of the academic and grey literature, including journalistic and blog sources as well as company reports and individuals' websites focused on horizon scanning of science and technology. We propose that each item in the system map could be the subject of a search using a PEST framework: Political & Regulatory (P), Economic (E), Social & Cultural (S), and Technological & Scientific (T). A PEST framework (also known as 'STEEP' or 'PESTLE') is a commonly used analytical tool for identifying and categorizing basic trends and information about different contextual issues which will influence any future situation. It helps in the analysis of future impact because it can ensure the process is as exhaustive as possible as it provides a useful 'checklist' of the types of factors one might need to think about. The PEST framework can thus be used to help identify the main external factors and drivers that could impact the risks and opportunities. It will also provide a useful way to identify the important drivers and other factors within a predefined timeframe.

The study team will look at the *Gartner hype cycle*, *MIT Technology review*, *IDC Predictions* and *FutureScape events*, *EurekaAlert!*, and other market research organisations, awards and celebrations (e.g. *Science Breakthrough of the Year*, *Scientists of the year*). We will also target those individuals and organisations that are known to specialise in horizon scanning techniques so we can understand the full spectrum of available methodologies. Examples include David Mattin (Head of Trends & Insights at TrendWatching), Sarwat Singh (MegaTrends), Arup Foresight (www.driversofchange.com), *Development, Environment and Foresight Journal*. By deliberately **targeting sources that already review emerging technologies and applications, as well as social, economic, and environmental trends**, the study team can conduct a meta-analysis of what many other horizon-scanning experts believe are the important issues to consider.

In addition, we will set up *Google News Alerts* for the duration of Task 1 to scan for news relevant to the themes of this study identified in Task 1.4, such as 'food system', 'food safety', 'food authenticity', 'food security', 'food production', 'GMO', 'food blockchain', etc. . With the ability to set up this search to track items from different internet domains, such as '.org', '.edu', '.gov', we will also distinguish the different contexts in which news regarding technologies and novel applications of technologies are emerging. To capture the most up-to-date, 'in-time' discourse on risks and opportunities, we will also use publically available tools that screen social media in an organised manner. Some of these include: *TweetDeck*, *HootSuite*, and *Storify*.

To ensure a thorough search of the horizon scanning sources, the study team will also draw on the technical expertise of internal RAND Corporation Knowledge Services who are experts in database searching, search tools, search engines and setting up search alerts, social media searches, setting up search strings and running iterative searches and capturing data in a systematic manner (often through EndNote). The output from Task 2.1 activity will be a long list of risks and opportunities, which can be categorised by source and also the underpinning methodology by which they were generated (where this is disclosed).

Task 2.2: Initial filtering

The second task in Phase 2 of our approach will focus on initial filtration of the results of the Task 2.1 search. While Task 2.1 'casts the net wide' to capture multiple risks and opportunities, within Task 2.2, we will focus on categorising these according to the themes and sub-themes of particular importance to FSA. As such, an initial filtering exercise will be conducted to relate the identified risks and opportunities to the themes/sub-themes and according to the criteria established in Task 1.5. A frequency analysis of appearance from Task 2.1 search outputs will also be used. Together this will enable the study team to reduce the initial set of risks and opportunities to a shorter list.

Based on the shorter list of technologies filtered in the 'first cut', we would identify risks and opportunities to examine in greater detail through a rapid evidence review in Task 2.3. We propose to look at the most frequently cited risks and opportunities but would seek input from FSA to identify any particular areas that should be investigated further as a priority. We will also seek the views of our internal RAND experts (Task 2.4) to help identify those areas that are not frequently cited but are nonetheless relevant for the topic of this study and with a significant future potential. This will help to ensure that potentially catastrophic risks or particularly beneficial opportunities are retained.

The output from Task 2.1 will be a prioritised list of risks and opportunities which will be researched in detail through rapid evidence review (Task 2.3).

Task 2.3: Intensive investigation

In Task 2.3, we will undertake a deeper investigation of the prioritised risks and opportunities identified in Task 2. Having prioritised areas for further investigation, these would then be subjected to a **rapid evidence review approach**, which would take an accelerated approach to literature review in order to provide a robust and repeatable way of assessing the publications and publication activity in a certain area. Through this approach, it would be our aim to identify the most authoritative source and, if possible, the first appearance of the risk or opportunity.

To ensure we conduct a systematic search through the most authoritative sources, we will first begin the review by searching through subscription databases RAND Europe has access to as well as *Google Scholar* which is publically available. Examples of relevant databases for searches under Task 2.3 include: ProQuest, Academic Search Complete (EBSCO), National Technical Reports Library, Scopus, Web of Science, Social Sciences Citation Index, JSTOR (digital library of journals, books and primary sources covering a variety of disciplines), Behavioural Sciences eBooks, and ACM and SPIE Digital Library.

In particular, we aim to correlate the findings on the risks and opportunities with the themes and issues of importance identified in Phase 1. This will serve to establish the prevailing discourse surrounding the **potential disruptive influence of the risk or opportunity** on issues such as antimicrobial resistance, climate change, evolving strategies of fraudulent food production, evolving strategies of labour exploitation, possible loss of employment and the associated impact on disposable income levels, and Brexit with its potential changes to import/export tariffs, levels of strategic and scientific collaboration, etc.

The results of Task 2.3 (in the form of relevant risks and opportunities) will be scored by RAND internal experts against a scoring scale of *low*, *medium*, and *high*. The scoring will be done against the criteria identified in consultation with FSA in Phase 1, Task 1.5 such as applicability to the global food system, potential impact on food safety and authenticity, influence on integrity of the food supply chain, transparency in the food system, and consumer acceptance and trust.

We will look to include the highest scored items identified, with at least 80% of them scoring above high value. We will also take note to include items which may not score very highly on evidence authority but score medium on novelty and high on applicability to food safety and authenticity.

AMENDMENT TO TASK 2.3 FOLLOWING POST TENDER CLARIFICATIONS:

INTERVIEWS:

We propose that expert interviews are used as part of the assessment of prioritised risks and opportunities under Task 2.3: Intensive investigation. The project team will conduct 15 telephone interviews with a mix of practitioners, experts and researchers. Interviewees will only assess the risks and opportunities with which they are familiar, therefore the number of responses per issue item will likely range from 7 or 8 to a maximum of 15. Interviewees will score each item according to the criteria established in Task 1.5 (e.g. evidence authority, novelty factor, possibility of successful implementation, applicability, relevance and timeframe for realisation). Interviews will replace the internal team scoring exercise. An overview of the proposed replacement by interviews of the internal team scoring exercise is provided in the table below.

	Original proposal	Revised proposal
Task	Internal RAND expert scoring	Expert interviews to undertake scoring (15 interviews)
Task breakdown	3 hours each for 4 internal experts to undertake the scoring, plus synthesis and analysis of results + 0.5 days to develop the scoring protocol, including QA	Half a day per interview, including interview set-up, conducting each interview, writing up the interview, analysis of results (7.5 days) + 0.5 days to develop the interview protocol, including QA
No. of days	2	8

Task 2.4: Consult the experts

In this task, we will compare the characteristics of the selected risks and opportunities, and their metric values, to determine their effects on the goals and functions of the FSA. As part of this step in the horizon scanning exercise, we will draw together our in-house assessment panel of foresight and food system experts including three individuals who are not directly involved in the horizon scanning exercise. The team will include Dr Richard Silbergliitt (Expert advisor), Dr Jon Freeman (Expert advisor), Elta Smith (Project Leader) and Stijn Hoorens (Continuous QA reviewer). We also propose to include 2-3 external experts identified by FSA to participate in this part of the assessment. The experts will participate in a half-day workshop to challenge and validate the final inputs of the list of risks and opportunities that will be prioritised by FSA and the Science Council in Phase 3.

As part of this step, we will develop a series of visualisations to present to the FSA at a half-day meeting. Figure 7 shows the trade-off between a measure of impact on food safety and the probability of successful implementation (POSI). Each risk and opportunity identified will be shown as a point on the plot representing the assessment of an alternative's relative expected value (i.e. the farther from the origin, the higher the assumed value), while error bars will be used to show an estimate of the degree of uncertainty in each dimension. The vertical axis represents the total mission goal value considering the value metrics of the analysis (e.g. risks and opportunities related to food safety). The points further from the origin represent those risks and opportunities that offer the highest combined assessment of potential agency mission value as identified in Task 1.1. The horizontal axis represents the POSI of each risk and opportunity. The points further from the origin represent risks and opportunities with the highest POSI (i.e. the fewest identified potential obstacles or barriers). The iso-curves show the contours of equivalent (in relative expected value terms) trade-offs between the presumed total FSA mission benefit and the POSI metric. Movement along these curves away from the origin would imply trading some potential benefit in exchange for a higher POSI while maintaining the same expected value.

Figure 7 Example of a comparative visualization

The aim of the visualisations is to present a complicated set of information: the metric values of the key characteristics of prioritised risks and opportunities (e.g. costs, risks, time to impact etc.); the consensus expert opinion; the range of uncertainty about these values for the different risks and opportunities; the barriers to implementation identified for each opportunity; and the trade-offs between the characteristics of a group of risks and opportunities now placed on the same scale. This will be developed based on a scoring system implemented during the expert workshop based on the available evidence. An important feature of RAND's approach to foresight is to capture dissent as well as consensus, as this can be an important indicator of weak signals. Risks and opportunities that have a high degree of consensus and where there is strong dissent will both be considered.

We will develop a series of these visualisations to reflect the different metric values for risks and opportunities that we have selected. These will be considered by FSA during a half-day meeting for prioritization in line with the agency's objectives. They will be updated by the study team in line with discussions during this meeting and presented to the Science Council during the concluding workshop as part of a final reflection on the risks and opportunities of most importance for FSA in the coming years.

Phase 3 Prioritisation: Compare risks and opportunities and decide FSA's response (Objective 2)

Task 3.1: Half-day meeting with FSA to undertake a validation and initial prioritisation exercise

This step involves a half-day meeting with FSA to validate the shortlist of risks and opportunities identified in Task 2.3 and prioritise a set of these in line with FSA's mission to include in discussion with the Science Council (Task 3.2). The study team will present each risk and opportunity in the form of the visualisations developed in Task 2.3, explaining their relative impact on FSA objectives (food safety, authenticity) against the probability of realisation. During the meeting, FSA will consider which of the identified risks and opportunities should be prioritised for deeper analysis and discussion with Science Council. A final short list of three risks and opportunities will be prioritised for taking forward to the Science Council workshop in Task 3.3.

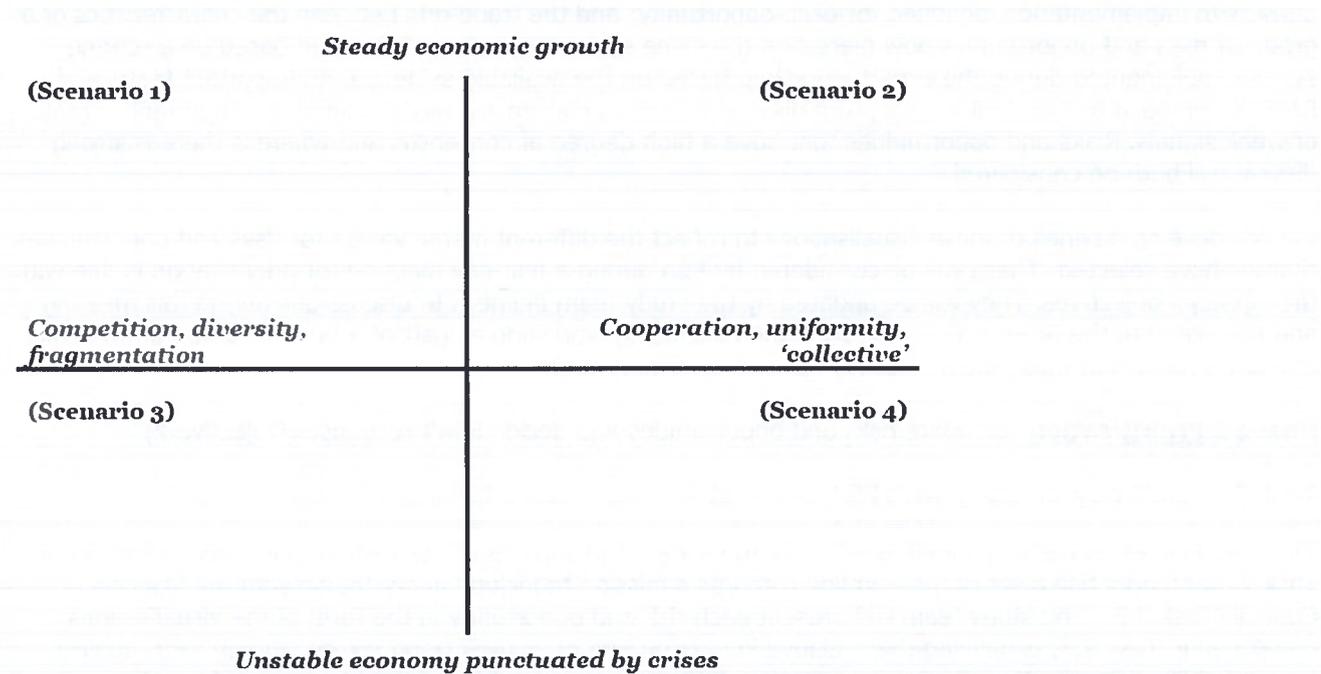
Task 3.2: Define characteristics of present and future visions in the form of scenarios

We propose to take a selection of the three highest priority risks and opportunities, as identified in the prioritisation meeting with FSA and develop a set of scenarios to test at the Science Council meeting; through this activity, FSA will be able to identify an approach, or course of action, for each.

Scenarios are 'stories' that establish cause and effect links to connect the future with the present. They help to illustrate important decisions, events and consequences. To develop the future scenarios, we will employ a 2x2 scenario framework (Silberglitt et al, 2015), composed of four scenario spaces in the quadrants of two orthogonal axes. The axes of the matrix refer to two sets of drivers of change. The scenarios will provide the basis from which the Science Council can characterise their future visions during the workshop.

The ultimate aim of this part of the study is to identify and characterise FSA food safety and authenticity needs. Therefore, the scenarios will take as one principal axis the effectiveness of FSA in using technology to accomplish its food safety and authenticity mission. The other axis will represent the effects of the evolution of society on food safety and authenticity. The output of this exercise will be an illustrative graph of four possible futures (An example is provided in Figure 8).

Figure 8 Example scenario matrix relevant to the Horizon 2020 research programme (Source: Schindler et al., 2014)



The four possible futures generated will be designed to represent extreme situations and as such, they are highly unlikely to occur. Rather than serve any predictive function, the scenarios are intended to provoke discussion about FSA in the immediate term (2017-18), where current trends may be headed, the relative desirability of different positions in the future, and how actions we take now might affect the paths to different possible futures.

We will develop the scenarios with the intention of reflecting macro environment changes (beyond FSA's influence), where the macro environment is in turn shaped by interactions of many drivers including scientific discoveries, technological change, social and economic forces, and political and legal processes. The framing exercise (Phase 1) will identify those drivers of change that are likely to have the greatest impact and relevance for the FSA. The scenario exercise will generate contrasting possible – but logically consistent - futures out of different combinations of and interactions between these driving forces. The steps involved in scenario building are outlined in Box 1.

Step-wise approach to scenario building

- | | |
|--------|--|
| Step 1 | Specify the system and define the outcomes of interest. |
| Step 2 | Identify external factors driving changes in the system. |
| Step 3 | Identify system changes, connections between these factors and system changes and how the changes affect the outcomes of interest. |
| Step 4 | Categorise the uncertainty of the factors and system changes. |
| Step 5 | Assess the relevance of the uncertain factors and system changes. |
| Step 6 | Select a small number of highly uncertain factors with high impact on the outcomes of interest. |
| Step 7 | Identify relevant positions on these dimensions for a small number of scenarios. |
| Step 8 | Describe other attributes for each scenario. |

The scenarios will be developed by the study team and reviewed by FSA, before being finalised and sent to the Science Council prior to the workshop. The scenarios will be included as part of the briefing pack to workshop participants and serve as a reflection tool during the breakout sessions (see Task 3.3).

Task 3.3: Science Council workshop

The scenarios developed in Task 3.2 will be used during the Science Council workshop in order to decide on a course of action for each risk and opportunity. We will present the scenarios to the workshop participants and invite them to pose preliminary questions about them. Workshop participants then break out into teams and examine and test the logic of the scenarios (what is missing, how would we get to the landing place from here, what else must have happened along the way, what other impacts and effects would be foreseen?). The breakout groups will then apply the following nine steps to the specific risk or opportunity assigned to them:

1. Explore and discuss the current (First Horizon) position on the scenario chart and the role of the risk or opportunity in this position.
2. Identify the drivers for and barriers to the appearance of the risk or opportunity in the current position and characterize current FSA capabilities to mitigate the risk or exploit the opportunity.
3. Envision possible locations on the scenario chart in the five year period to 2030 (Third Horizon) and the similarities and differences of these locations from the current location.
4. Identify problems that these future positions on the scenario chart would pose for FSA and any opportunities that they would create.
5. Explore the role that the risk or opportunity would play in relation to the FSA mission in these future positions.
6. Debate what would be desirable and undesirable future locations on the scenario chart and why.
7. Envision possible paths (Second Horizon) from the current location to desirable future locations, the possible enablers (drivers) of these paths, and what would prevent these paths (barriers).
8. Consider how technology could enable or prevent these paths, and which approaches could enable paths to desirable locations and/or prevent paths to undesirable locations or mitigate their effects.
9. Finally, identify FSA needs (including training and changes in policies or processes) to enable paths to desirable locations and/or prevent paths to undesirable locations or mitigate their effects.

Each team has an active facilitator to keep the discussion focused, ensure that the required tasks are all addressed and manage the flow of conversation so that each viewpoint and each party has a chance to be considered. Each breakout session will spend an estimated two hours considering one of the three risks or opportunities prioritised by FSA in Task 3.1.

The breakout sessions will reconvene in plenary to feedback the results of the breakout discussions through 10 minute 'presentations'. The plenary group will then engage in a cross-cutting discussion for half an hour to discuss any similarities or differences between the different groups and areas of convergence or divergence. The plenary will then consider whether any specific course of action needs to be taken to address the risks and opportunities discussed and consider FSA's capabilities to continue assessing these through its monitoring, surveillance and foresight approaches.

The workshop may result in recommend changes to the scenarios, which will be considered by the study team. The output of the workshop will be a short summary report detailing the main points identified by each group and the results of the cross-cutting discussion, highlighting any actions that FSA should take in the immediate and near-term, and capacity to continue assessing the risks and opportunities over the longer-term.

Phase 4 Translation: Assess the potential approaches FSA could take to implement ongoing foresight capability (Objective 3)

Task 4.1: evaluate the effectiveness, efficiency, relevance and value-added of the approach undertaken in Phases 1-3.

This task will assess the strengths, weaknesses, limitations, and learning points from the pilot foresight exercise undertaken in Phases 1-3 of this study. It will also consider future refinements that could be made.

Exemplary evaluation questions include:

- What is the quality of the evidence on risks and opportunities identified at each stage of the study?
- How relevant are the risks and opportunities identified to the FSA's remit and anticipated needs?
- What is the value of the study results to the FSA?
- Related to this, what does this approach provide that other existing capabilities available to FSA do not?
- How sustainable is the approach undertaken in this study in terms of serving as a baseline exercise and model for future foresight work by the FSA?

The results of the evaluation will be summarised in the final report.

Task 4.2: compare the approach with other known approaches to assess the potential for this study to be extended to future, ongoing foresight work by the FSA.

The objective of this task is to assess what the approach taken in this study offers that is similar to or different from other foresight methods and what is the value-add of this approach (if any) compared to these other methods.

In addition to the horizon scanning and foresight methods used in this pilot exercise, RAND has pioneered a number of other horizon scanning and foresight methodologies and prioritisation approaches, such as the Delphi technique, scenario planning and PortMan (portfolio analysis and management) method. Other approaches, such as trend analysis, have also been used extensively by RAND. We have used these methods effectively to conduct horizon scanning and foresight activities, and believe these are effective at determining consensus views and assessing emerging trends. Others in the field of futures research have also developed horizon scanning and foresight approaches, and in our evaluation we will compare these with our novel approach.

However, this is the first study, to our knowledge, to combine several of these approaches, and we feel this brings added value compared to previous studies in a number of ways:

- A key challenge when conducting horizon scanning exercises is ensuring the outputs are relevant and aligned with the priorities of policy makers and decision makers, and obtaining 'buy-in'. We believe that a strength of our approach lies in the framing exercise in Phase 1, which will ensure that identified risks and opportunities are aligned with the goals and missions of the FSA.
- A second critique of foresight methods is their strong focus on consensus and important drivers of change. By contrast, a key strength of the Three Horizons approach employed in this study, compared to other scenario methods, is its ability to pick up weak signals of change or emerging issues, which could be predictors of disruptive change. Our approach to horizon scanning focuses on including not only risks and opportunities about which there are the most consensus, but also those about which there is strong disagreement; these 'hotly contested' issues can be good indicators of weak signals for future change.

The output of this task will be a summary of the relative strengths and weaknesses of the approach used in this study compared to other futures methods.

We will include the results of Phase 3, Task 3.3 and Phase 4 results in the final report and revise the draft final report in line with feedback from FSA.

DELIVERABLES

Please outline the proposed project milestones and deliverables. Please provide a timetable of key dates or significant events for the project (for example fieldwork dates, dates for provision of research materials, draft and final reporting). Deliverables must be linked to the objectives.

For larger or more complex projects please insert as many deliverables /milestones as required.

Each deliverable should be:

- no more 100 characters in length
- self-explanatory
- cross referenced with objective numbers i.e. deliverables for Objective 1 01/01, 01/02 Objective 2 02/01, 02/02 etc

Please insert additional rows to the table below as required.

Deliverable/ milestone No.	Reference	Target Date	Title of deliverable or milestone
1	M1	10/01/2018	Kick-off meeting with FSA and Science Council
2	D1	26/01/2018	Inception report – scope, objectives, approach, methodology, deliverables and milestones, risks and QA plan
3	D2	28/02/2018	Interim report – logic model, food system map, three horizons framework (Objective 1); in time for briefing to the Board meeting (14 March).
4	M2	07/03/2018	Interim report meeting with FSA and Science Council
5	W1	16/05/2018	Half-day expert scenarios workshop
6	D3	30/05/2018	Draft final report – revised interim report, addressing comments received; also including the results of the horizon scanning, the prioritization exercise and the scenarios workshop. (Objectives 1 + 2 + 3)
7	M3	06/06/2018	Final report meeting with FSA and Science Council
8	W2	27/06/2018	Science Council meeting – study validation and final assessment exercise (Objectives 1 + 2 + 3)
9	D4	25/07/2018	Final report – revised report including Science Council workshop results; also including the evaluation (Objectives 1 + 2 + 3 + 4)
10	M4	Early Sept 2018	Final report meeting with FSA and Science Council (before report publication and launch)



4: ORGANISATIONAL EXPERIENCE, EXPERTISE and STAFF EFFORT

A. PARTICIPATING ORGANISATIONS' PAST PERFORMANCE

Please provide evidence of up to three similar projects that the project lead applicant and/or members of the project team are currently undertaking or have recently completed. Please include:

- The start date (and if applicable) the end date of the project/(s)
- Name of the client who commissioned the project?
- Details of any collaborative partners and their contribution
- The value
- A brief description of the work carried out.
- How the example(s) demonstrate the relevant skills and/or expertise.
- What skills the team used to ensure the project (s) were successfully delivered.

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

[Redacted]

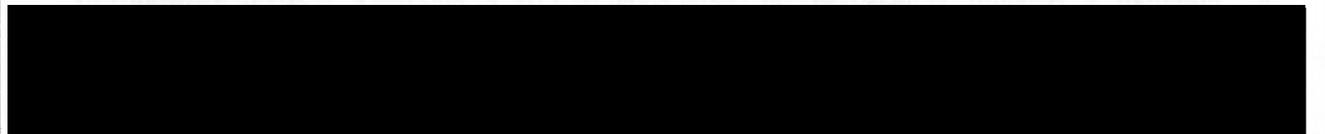
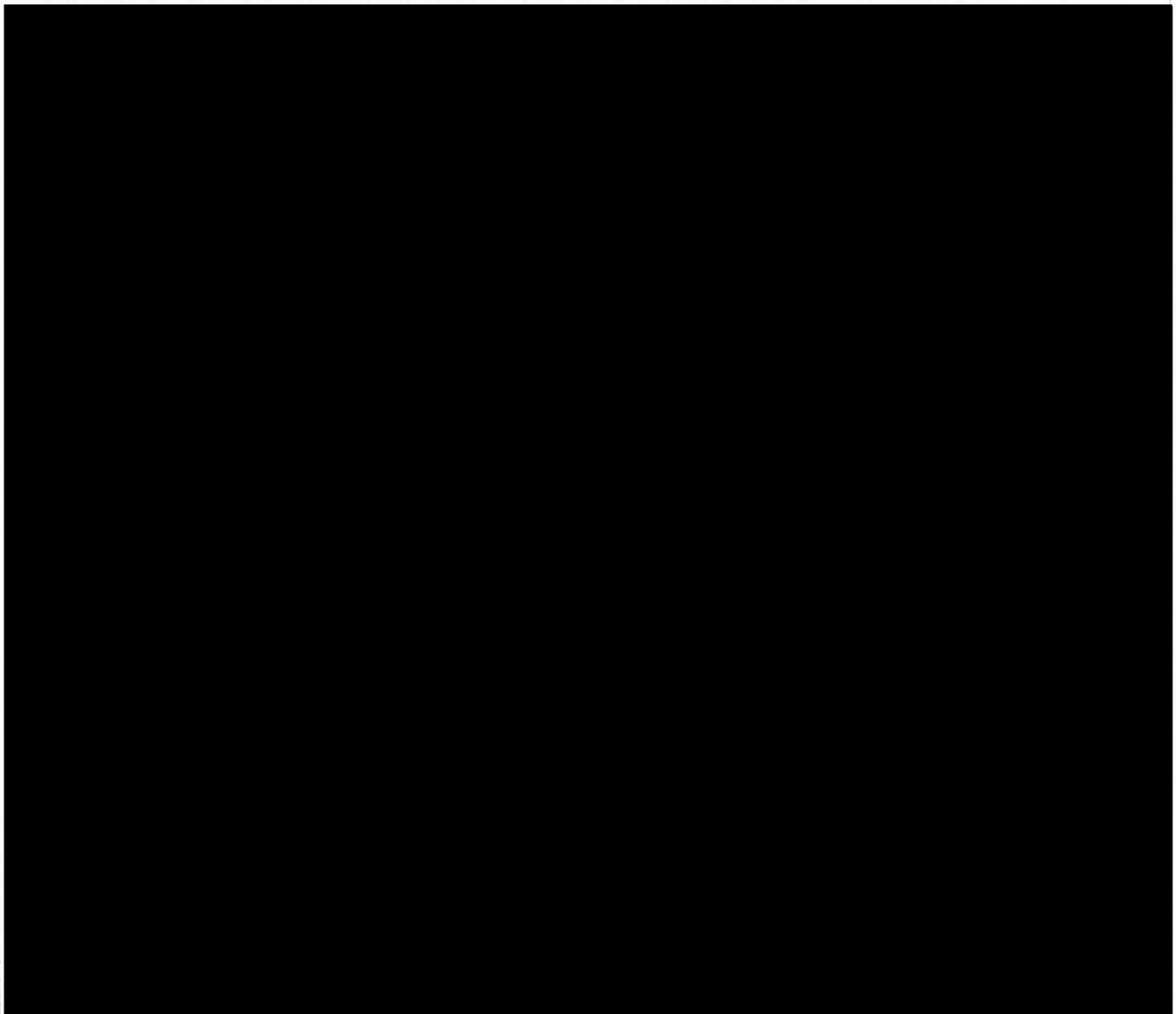


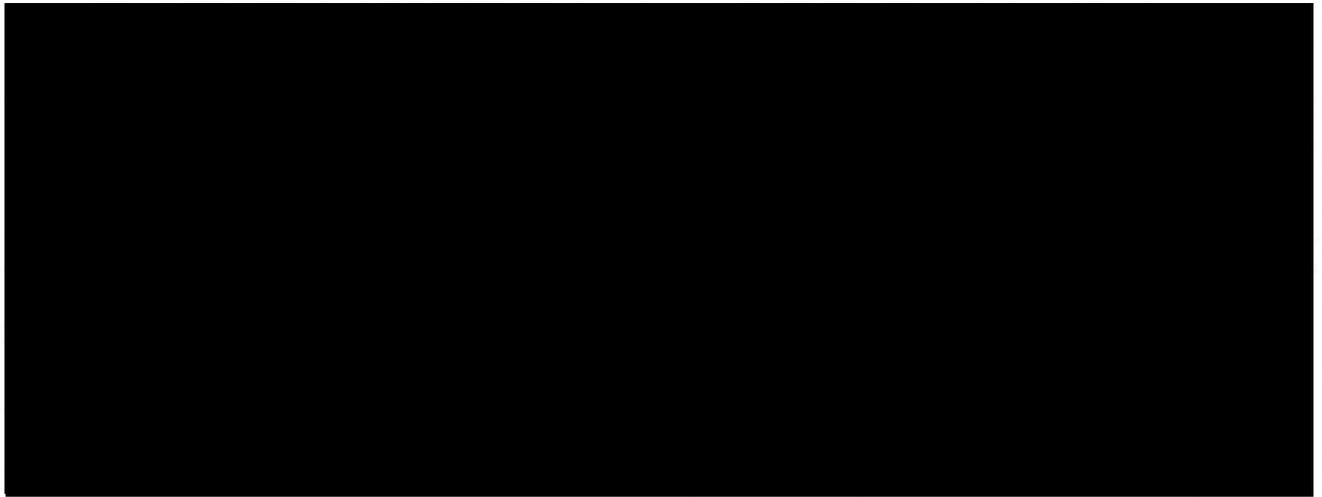
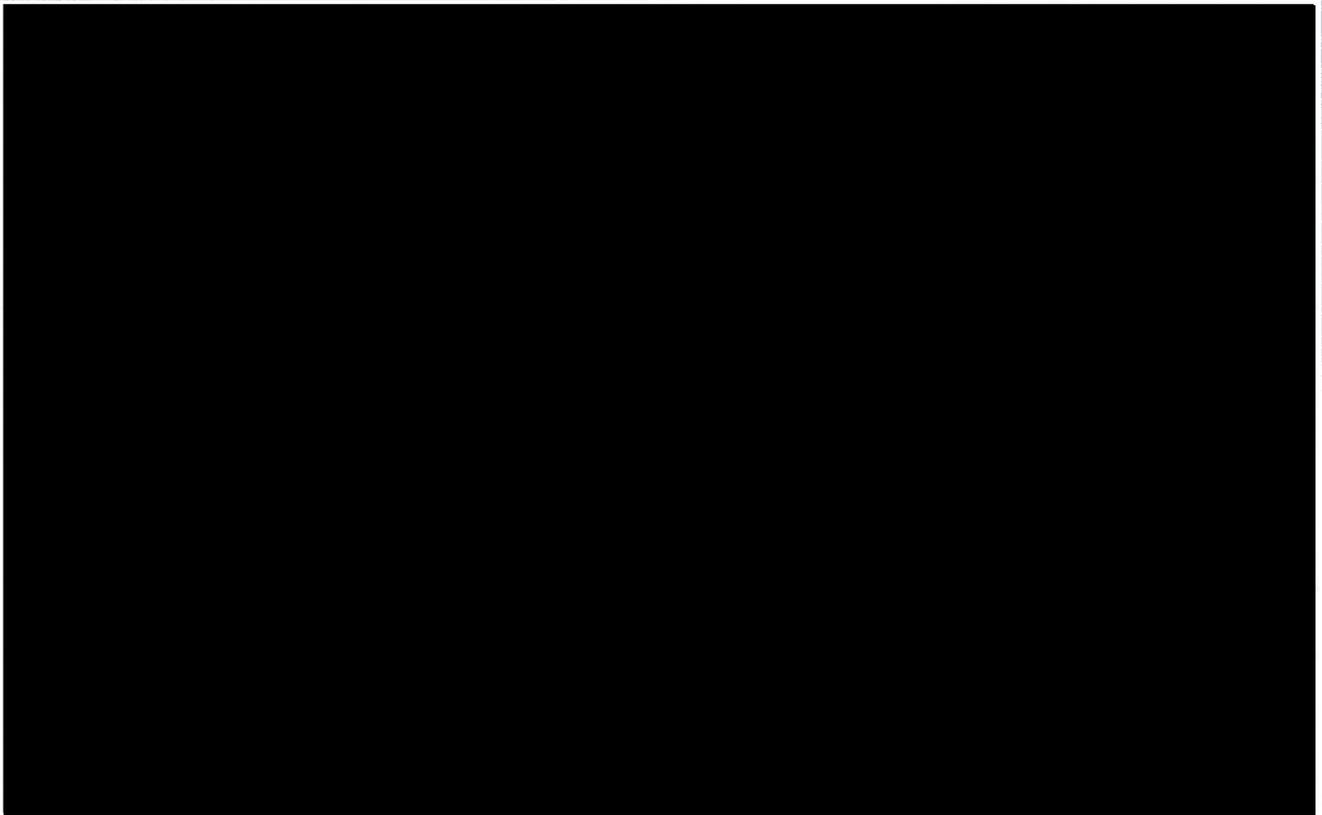
B. NAMED STAFF MEMBERS AND DETAILS OF THEIR SPECIALISM AND EXPERTISE

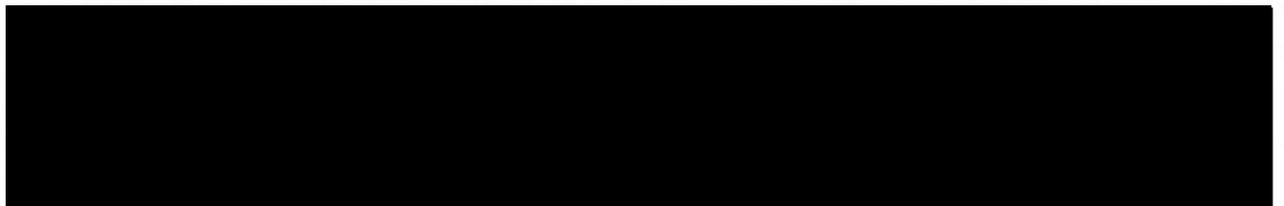
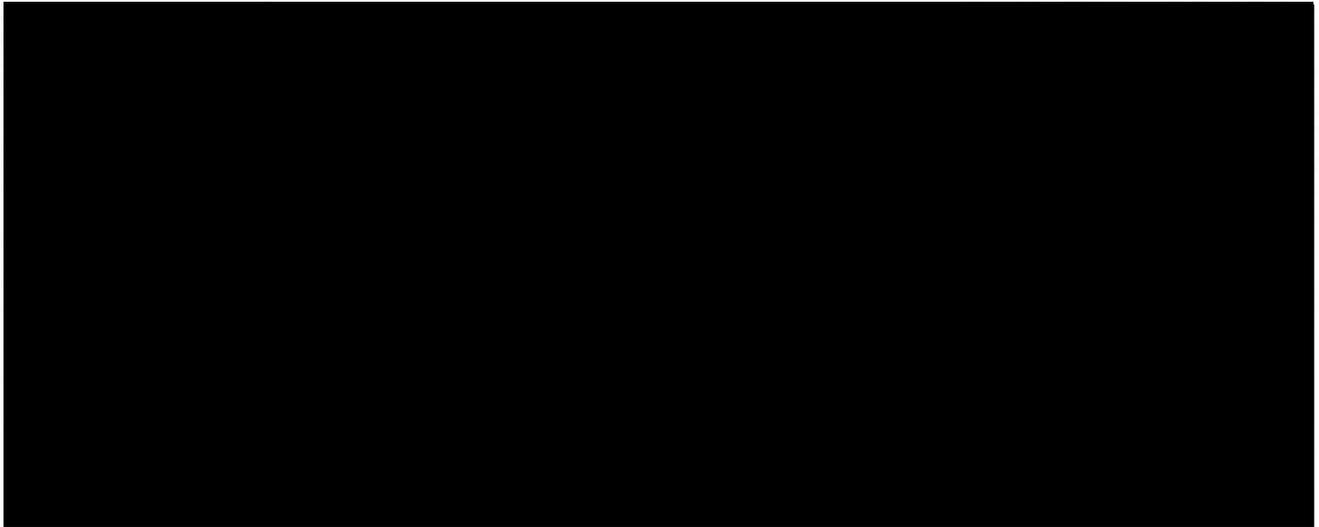
For each participating organisation on the project team please list:- the names and grades of all staff who will work on the project together with details of their specialism and expertise, their role in the project and details of up to 4 of their most recent, relevant published peer reviewed papers (where applicable). If new staff will be hired to deliver the project, please detail their grade, area/(s) of specialism and their role in the project team.

Lead Applicant **RAND Europe**

Named staff members, details of specialism and expertise.









B. STAFF EFFORT

In the table below, please detail the staff time to be spent on the project (for every person named in section above) and their role in delivering the proposal. If new staff will be hired in order to deliver the project please include their grade, name and the staff effort required.

Name and Role of Person where known/ Role of person to be recruited	Working hours per staff member on this project
Total staff effort	

5: PROJECT MANAGEMENT

Please fully describe how the project will be managed to ensure that objectives and deliverables will be achieved on time and on budget. Please describe how different organisations/staff will interact to deliver the desired outcomes. Highlight any in-house or external accreditation for the project management system and how this relates to this project.

In this section we provide details of the processes and expertise in place to ensure the successful delivery of this project. Leadership will be provided by a designated project leader (Elta Smith) who will provide overall intellectual leadership and maintain communication with the FSA, and a project manager (Camilla d'Angelo) who will handle day-to-day running of the project. Both have experience of delivering projects of this nature using RAND's proven approach to project management. Important components of this approach are:

- **Internal kick-off meeting and regular catch-ups:** In addition to a kick-off meeting with the FSA, the research team will hold an internal meeting to ensure that all team members are familiar with the entire project and its wider context, then meet weekly to discuss progress and ensure early identification and resolution of any emerging threats to project timeframes or outputs.
- **Communication with the client during the project:** We have planned for one-hour telephone meetings every 2-3 weeks between the project manager and commissioning team, and will maintain open lines of communication with FSA staff.
- **Use of project planning tools:** Such as Gantt charts, timesheets, and internal monitoring reports.
- **Specialist project support:** Project planning is underpinned by provision of information from our dedicated Project Support Office of four expert project managers and four financial officers, which tracks and reports on progress against budgets and timelines throughout the lifespan of every RAND project.

We propose a research team that combines thematic expertise in food safety with methodological expertise in horizon scanning and foresight methods. Each team member will be allocated a role that matches their expertise.

RAND Europe is an ISO 9001:2015 certified organisation, an international standard for good quality management practices appropriate for knowledge intensive organisations.

6. RISK MANAGEMENT

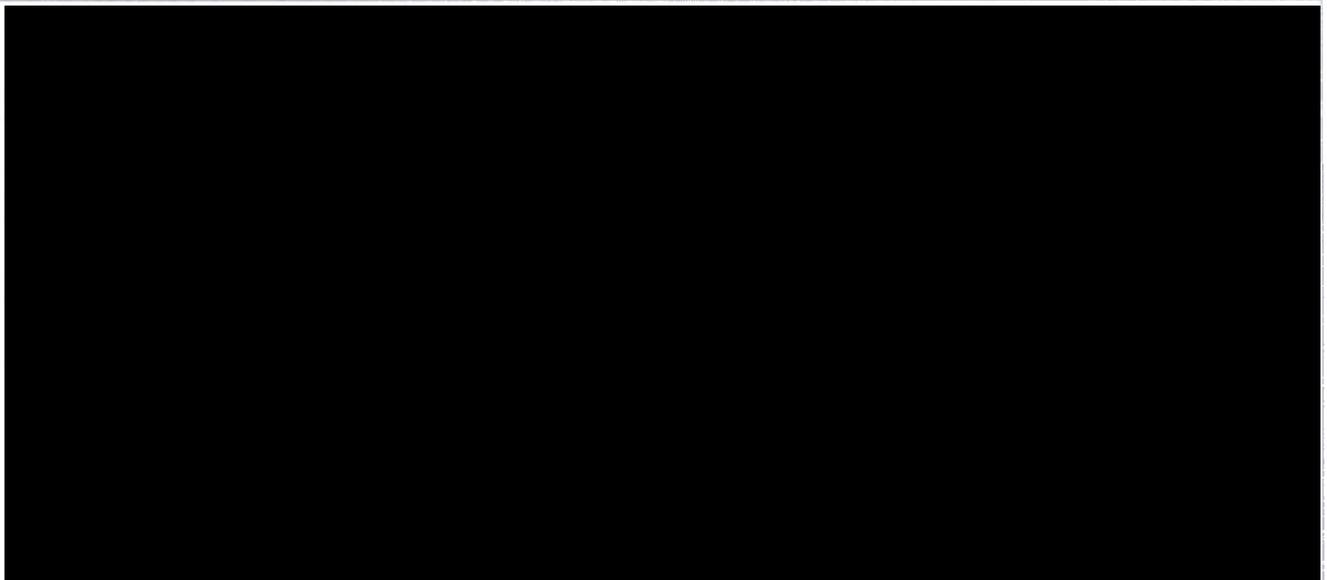
In the table provided, please identify all relevant risks in delivering this project on time and to budget. Briefly outline what steps will be taken to minimise these risks and how they will be managed by the project team. Please add more lines as required

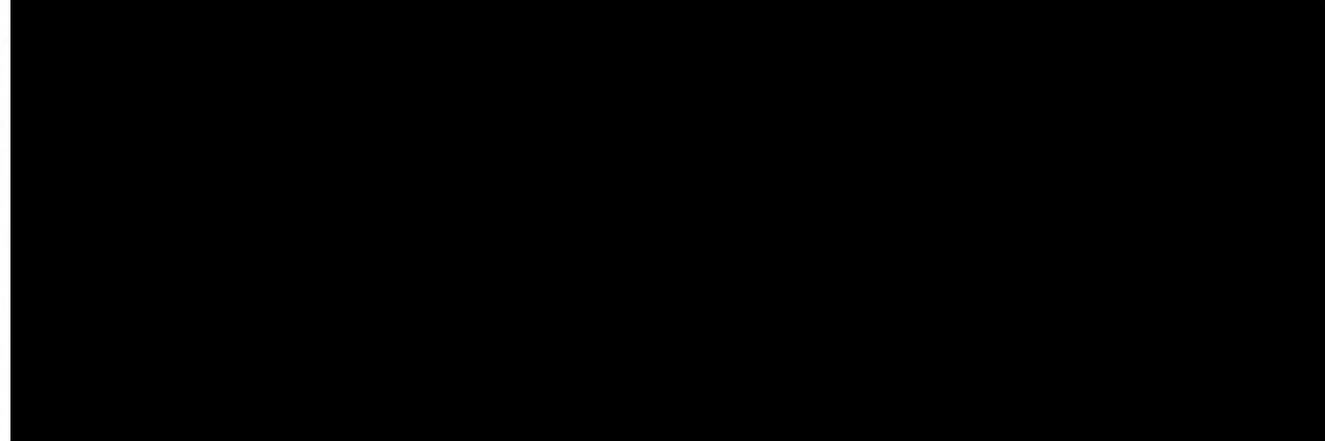
Identified risk	Likelihood of risk (high, medium, low)	Impact of Risk (high, medium, low)	Risk management strategy
Low quality of data from desk-based research or difficult to gather sufficient data to provide comprehensive meta-analysis of horizon scanning sources	Medium	Low	RAND Europe researchers have experience of conducting desk-based research and data capture on complex subjects and eliciting a high level of relevant detail. RAND Europe has access to a vast range of databases to ensure a sufficient number of reliable sources
Foresight methods turn out to be inappropriate	Medium	Low	We have selected staff with expertise in horizon scanning and foresight methodology gained in

			previous projects. This will ensure that the team is able to select appropriate foresight methods.
Direction and coverage of the project is not as expected by FSA	Medium	Medium	RAND will maintain regular dialogue and engagement FSA, and use the first month as an opportunity to refine the approach for subsequent months
Poor communication with FSA	Low	Low	Frequent communication with the FSA is included in the project plan through telephone calls and emails as well as the meetings listed.
Schedule overrun	Low	Medium	Our strong project management and experienced team should ensure that the project runs to schedule and that the FSA is kept regularly informed of developments. RAND Europe's management information systems provide detailed weekly information on the status of each project and each team member, allowing project managers to respond rapidly to any issues arising.
Problems with continuity of the service	Low	Low	RAND Europe project managers work closely with team members to ensure a number of people will be fully informed of all activity on the project. If one of the core project team was incapacitated, another appropriate and experienced researcher would be allocated to the team to replace them. RAND Europe has highly proficient computer security team and well developed disaster recovery and permanent off-site back up procedures.

7. QUALITY MANAGEMENT

A. QUALITY MANAGEMENT







[Redacted text block]

B. ETHICS

In alignment with RAND's mission, research is designed, conducted and disseminated with the aim of benefiting public good and RAND Europe has research ethics principles in place to achieve this. As this project is a desk-based research study there will be no involvement of human samples or animal research. Of RAND Europe's ethics principles, the following have importance to this project: integrity and quality, meaning researchers use appropriate research design, frameworks and method selection to ensure that findings are robust and defensible; transparency and accountability, meaning the methodology and findings are open for peer review and wherever possible, findings are made publicly available in a timely manner.

C. DATA PROTECTION

RAND Europe is committed to managing information in a secure and controlled environment and the company's Information Security Policy is aligned with ISO 27001:2013. RAND Europe has three key concepts that define information security:

- 1. Confidentiality** which ensures that information is secure and accessible only to authorised users.
- 2. Integrity** which safeguards the accuracy and completeness of the information by preventing accidental or malicious modification.
- 3. Availability** which ensures the information is accessible upon demand by authorised users.

As part of the company's data protection policy, anyone processing personal data must comply with the eight enforceable principles of good practice which provide that personal data must be: processed fairly and lawfully, processed for limited purposes and in an appropriate way, adequate, relevant and not excessive for the purpose, accurate, not kept longer than necessary for the purpose, processed in line with data subjects' rights, secure and not transferred to people or organisations situated in countries without adequate protection.

D. SUSTAINABILITY

At RAND Europe there are a number of initiatives to promote sustainability. The use of ID Card printers means documents are only printed if the individual goes to the printer and scans their ID badge. This reduces unnecessary printing and therefore helps to reduce wasting paper. Lights have motion sensors and so are only on when necessary which reduces energy wastage. The company also uses conference call facilities whenever possible to reduce environmental impacts associated with modes of transport.

E. DISSEMINATION AND EXPLOITATION (Science Projects Only)

RAND Europe has extensive experience in translating research into concrete policy recommendations and disseminating the work to a wider audience using a variety of different dissemination channels.

1) Workshop

As set out in the tender specification, we acknowledge that a core part of the dissemination and exploitation strategy will include a workshop with members of the FSA Science Council and relevant experts and stakeholders. In the discussion, we would:

Discuss findings from the report and provide a forum for reflection and future learning

Inform areas for future consideration and action

Consider what role the FSA could play

Consider any potential future evidence needs

2) Social media and media communication

RAND Europe regularly uses social media to disseminate its research findings and policy recommendations. RAND aims to publish all of its research work in the public domain; most of it is available on its corporate website (<http://www.rand.org>). RAND's reports have a clear focus in developing policy pointers and reach a broad audience across the globe and are at the same time very well read by scholars, policymakers and the general public. A dissemination strategy could be clarified with the FSA during the kick-off (or interim) meeting. The final report that will be produced during this study can be accompanied by a dedicated project page, a press release or op-ed in a relevant media outlet (e.g.), and/or a social media campaign (*Twitter, Facebook, LinkedIn*).

In addition, RAND has the capacity to undertake a range of other dissemination activities through various channels, from distributing reports to a list of relevant experts, producing 1-2 page policy briefs, blog posts, and op-eds and infographics, which can be used for communicating with the wider audience of the study and the media. They are characterised by a strong visual impact and a design-based presentation of the main data and results of the research. All op-eds are also published open access on the RAND blog.

Annex 3 Suppliers Financial Proposal

Full legal organisation name	RAND Europe Community Interest Company
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Will you charge the Agency VAT on this proposal?	Yes
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Please state your VAT registration number:	GB 599 6251 79
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Project Costs Summary Breakdown by Participating Organisations
Please include only the cost to the FSA.

Organisation	VAT Code*	Total excluding VAT (£)
RAND Europe	STD	£ 73,209.27

Total Project Costs (excluding VAT) **	£ 73,209.27
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* Please indicate zero, exempt or standard rate. VAT charges not identified above will not be paid by the FSA

** The total cost figure should be the same as the total cost shown in table 4

** The total cost figure should be the same as the total cost shown below and in the Schedule of payments tab.

Project Costs Summary (Automatically calculated)

Staff Costs	£ ████████
Overhead Costs	£ -
Consumables and Other Costs	£ -
Travel and Subsistence Costs	£ ████████
Other Costs - Part 1	£ ████████

Total Project Costs	£ 73,209.32
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COST OR VOLUME DISCOUNTS - INNOVATION

The Food Standards Agency collaborates with our suppliers to improve efficiency and performance to save the taxpayer money. A tenderer should include in his tender the extent of any discounts or rebates offered against their normal day rates or other costs during each year of the contract. Please provide full details below:

We have applied a 25% discount to our senior staff members to ensure that they can provide substantial inputs to the study, both as project leader and as expert advisors. We have applied a 10% discount to our junior staff members as well.

Staff Costs Table

*This should reflect details entered in your technical application section 4C.
Please note that FSA is willing to accept pay rates based upon average pay costs. You will need to indicate where these have been used.

* Role or Position within the project	Participating Organisation	Daily Rate (£/Day)	* Daily Overhead Rate (£/Day)	Days to be spent on the project by all staff at this grade	Total Cost (incl. overheads)
[REDACTED]	RAND Europe	[REDACTED]		[REDACTED]	[REDACTED]
	RAND Europe	[REDACTED]		[REDACTED]	[REDACTED]
	RAND Europe	[REDACTED]		[REDACTED]	[REDACTED]
	RAND Europe	[REDACTED]		[REDACTED]	[REDACTED]
	RAND Europe	[REDACTED]		[REDACTED]	£ [REDACTED]
				Total Labour Costs	[REDACTED]
				* Total Overhead Costs (if not shown above)	

Consumable/Equipment Costs

Description and justification of the cost	Estimated Cost
Copy editing of the final report to a publishable-quality standard	£ 150.00
Total Costs	£ 150.00

Travel and Subsistence Costs

Purpose of journey or description of subsistence cost	Frequency	Cost each (£)	Total Cost
Transport - Cambridge - London, FSA mtgs	5	£ 50.00	£ 250.00
Transport - Bath to London - FSA mtgs	1	£ 95.00	£ 95.00
Subsistence costs - lunches	7	£ 15.00	£ 105.00
		£ -	£ -
		£ -	£ -

Total Travel and Subsistence Costs	£ 450.00
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The Pricing Schedule

Proposed Project Start Date	02-Jan-2018	Amount				
Invoice Due Date	Description as to which deliverables this invoice will refer to (Please include the deliverable ref no(s) as appropriate)	*Net	** VAT Code	§ Duration from start of project (Weeks)	§ Duration from start of project (Date)	Financial Year
Retention/Financial Deliverable	***					

Total	£73,209.32	
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* Please insert the amount to be invoiced net of any VAT for each deliverable
 ** Please insert the applicable rate of VAT for each deliverable
 *** 20% of the total project budget is withheld and will be paid upon acceptance of a satisfactory final report by the agency.
 §The number of weeks after project commencement for the deliverable to be completed

Summary of Payments

Financial Year (Update as applicable in YYYY-YY format)	2017-18	2017-18	2018-19	Retention	Total
Total Amount	£38,024.64		£20,542.82	£14,641.86	£73,209.32

