



The Government Chemist

Queens Road
Teddington
Middlesex
TW11 0LY
UK

Enquiries: +44 (0)20 8943 7403

Direct line: +44 (0)20 8943 7365

www.governmentchemist.org.uk

National Food Strategy Team,
Department for Environment, Food and Rural Affairs,
Area SE, 2nd Floor,
Seacole Building,
2 Marsham Street,
London,
SW1P 4DF
E: Foodstrategycallforevidence@defra.gov.uk

25 October 2019

Dear Sir / Madam,

Re: National Food Strategy – Call for Evidence

My remit as UK Government Chemist focuses on food. I am responsible under certain Acts of Parliament¹ for providing independent analytical measurement and expert opinion to avoid or resolve disputes over scientific data, which arise between local authorities and the food businesses they regulate.

My public remit also covers wider advice to UK government and other affected parties on the role of analytical measurement in effective policy, standards and regulations. My staff liaise with regulatory services involved in sampling, analysis and product testing linked to the investigation of alleged non-compliances, and input into national and international standardisation work aimed at global harmonisation.

The Government Chemist function is delivered by a programme of work that is part of the National Measurement System² portfolio overseen by the Department of Business, Energy & Industrial Strategy. To ensure that the Government Chemist programme remains effective and relevant, we refresh our strategy on a three-yearly basis. We have just developed the Government Chemist strategy for 2020 - 2023, following a comprehensive stakeholder consultation³, to identify the most important issues in food regulation that the Government Chemist may need to address in the short term. Our strategic aims are:

- Protecting consumers in a changing world
- Supporting business and government across the UK
- Maximising UK measurement infrastructure to address future challenges and
- Growing collaborative national skills initiatives.

New work is proposed to build capability, including in molecular biology (next generation sequencing) and protein mass spectrometry for allergens. Looking forward, ground work is proposed to prepare a future Government Chemist for disputes arising from the widespread application of point of use technologies – “the consumer as analyst”. I attach a copy of the Government Chemist strategy 2020 – 2023, as you may find it helpful in contributing to the evidence base for the development of a National Food Strategy.

¹ <https://www.gov.uk/government/publications/government-chemist-annual-statement-of-statutory-scope-2015--2>.

² <https://www.gov.uk/government/publications/national-measurement-system>

³ <https://www.gov.uk/government/publications/government-chemist-stakeholder-workshop-report-2019>



I also provide links to the London Food Strategy⁴ and my response to its consultation⁵ as it will have relevance for the development of a National Food Strategy.

As an office holder with responsibilities under the above regulations, I welcome the production of a National Food Strategy and the opportunity to provide input to a consultation calling for evidence.

Sound, fit for purpose, measurement can contribute to the underpinning evidence used in the formulation of a National Food Strategy. Based on our own prioritisation exercises we have identified core areas of our work that, amplified by collaboration with government, will contribute to the beneficial transformation of the food system. Please find my response to the consultation in Annex 1.

In view of the many synergies that the role of the Government Chemist has with the responsibilities of Defra, the Food Standards Agency and Food Standards Scotland, I have taken the liberty of providing some general comments below.

The National Food Strategy is an opportunity for the UK to build on a long history of an effective and world-leading agrifood infrastructure, addressing some of the elements that might need to be strengthened in an ever more international world, especially in the current geopolitical environment. Some aspects might include good intelligence and sound border inspection to protect the agrifood supply chain followed up by targeted physical checks for higher risk categories such as allergens, GMOs and food integrity. An important feature going forward will be a robust, fit-for-purpose, enforcement regime that includes recourse for businesses for technical appeal to the Government Chemist to avoid miscarriages of justice.

In order to achieve this, we need a fully connected system that is innovative but safe with regulators and the food industry working together (there are good examples of this in the Food Authenticity Network⁶ and the Food Industry Intelligence Network⁷). Particular attention needs to be paid to address the issues of the circular bioeconomy and climate, and hence, we need a system where new foods and materials (novel packaging etc.) are supported and validated as part of a wider UK Industrial Strategy.

As it is intended that the National Food Strategy will examine activity across several departments of state, building on the flagship [Agriculture Bill](#) and [Fisheries Bill](#) currently before Parliament, the [Industrial Strategy](#), the [Childhood Obesity Plan](#) and the upcoming [Environment Bill](#), I suggest that, in order to maximise 'buy-in' and impact, a National food Strategy should be recognised through a Food sector deal with government.

I think that collaboration is key to the success of a National Food Strategy and is the only way in which we can deliver the holistic end-to-end solutions that are required to contribute to making a safer and healthier world. By putting in place such a strategy, the UK can positively influence global challenges such as food security and climate change.

Thus, I am fully supportive of the development of a National Food Strategy as it is widely accepted that food makes a central contribution to our culture and society as a whole, through the aspects of health, wealth and happiness.

My staff and I are very happy to offer our assistance to the government for the development of a National Food Strategy.

⁴ https://www.london.gov.uk/sites/default/files/final_london_food_strategy.pdf

⁵ <https://www.gov.uk/government/publications/healthy-and-sustainable-food-for-london-response-to-consultation>

⁶ <http://www.foodauthenticity.uk/>

⁷ <https://www.campdenbri.co.uk/news/fiin.php>



In the meantime, if you would like to discuss my response then please do not hesitate to contact me.

Thank you for the opportunity to comment.

Yours faithfully

A handwritten signature in blue ink, appearing to read 'Julian Braybrook', written in a cursive style.

Julian Braybrook
The Government Chemist



Annex 1: Response of the Government Chemist to the Consultation on a call for evidence for the development of a National Food Strategy

Reference to consultation: <https://consult.defra.gov.uk/agri-food-chain-directorate/national-food-strategy-call-for-evidence/>

Confidentiality

1. Would you like your response to be confidential?

YES / NO

Introduction

2. What is your name: Selvarani Elahi
3. What is your email address: Selvarani.Elahi@lgcgroup.com
4. What is your organisation: Laboratory of the Government Chemist (LGC)
5. Are you a; a) Business - In an official capacity representing the views of an individual business – *please skip to question 6*
- b) Individual - You are responding with your personal views, rather than as an official representative of a business / business association / other organisation – *please skip to question 11*
- c) Non-Governmental Organisation - In an official capacity as the representative of a non-governmental organisation / trade union / trade body / other organisation – *please skip to question 15*
- d) Academic or Academic Institution
- e) Public Sector body - In an official capacity as a representative of a local government organisation / public service provider / other public sector body in the UK or elsewhere – *please skip to question 17*

About your organisation

15. What area does your organisation primarily operate within?
- a) The prevention or relief of poverty
 - b) The advancement of education
 - c) The advancement of religion
 - d) The advancement of health or the saving of lives
 - e) The advancement of citizenship or community development
 - f) The advancement of the arts, culture, heritage or science
 - g) The advancement of amateur sport
 - h) The advancement of human rights, conflict resolution or reconciliation or the promotion of religious or racial harmony or equality and diversity
 - i) The advancement of environmental protection or improvement
 - j) The relief of those in need, by reason of youth, age, ill-health, disability, financial hardship or other disadvantage
 - k) The advancement of animal welfare
 - l) The promotion of the efficiency of the armed forces of the Crown, or of the efficiency of the police, fire and rescue services or ambulance service
 - m) Trade body or union
 - n) Any other charitable purposes.

16. Where does your organisation operate? (please select all that apply)

- a) North East
- b) North West
- c) West Midlands
- d) East Midlands



- e) South West
- f) South East
- g) Yorkshire and the Humber
- h) East of England
- i) Greater London
- j) Northern Ireland
- k) Wales
- l) Scotland
- m) Outside the UK

Public sector body

17. What type of body are you:
- a) Central Government Department
 - b) An Arms-Length Body/Non-ministerial department/Government agency
 - c) Local government
 - d) Devolved government
 - e) Other

Your views

18. Remember, we want to use this process to discover actions and policies both big and small to help transform the food system. This might include ideas that:
- help citizens make informed decisions about the food they eat,
 - increase access to and affordability of high-quality food;
 - help prevent diet-related disease;
 - make food production more environmentally sustainable, and help prevent climate change
 - create a flourishing countryside rich in wildlife;
 - support farming, fishing and food businesses and communities thrive, benefitting employees and the wider community;
 - promote the highest standards of animal health and welfare;
 - put our food system at the forefront of innovation
19. We would like to understand the rationale behind your idea and study any accompanying evidence. For example, it might be an innovation that is already working well in your home, neighbourhood or business and could be scaled-up; or perhaps it is already happening in other countries. It could be a policy which could take a smaller idea to scale, or make a big idea a reality. We are also open to new ideas that might not have been tested but which you think have the potential to improve the system.

1. Citizens make informed decisions about the food they eat

Food Allergy

Food allergy is estimated to affect some 1 - 2% of adults and 5 - 6 % infants in the UK, with added annual personal healthcare burdens of some £800M - £1300M⁸. Avoidance of trigger allergens is the only preventative recourse for those with allergy.

Food allergy is a well-recognised public health, business and regulatory challenge. Risk assessment and risk management of food allergens in the supply chain must be better supported by accurate measurement of either proteins (preferably allergen proteins) and/or DNA, which currently remain significantly sub-optimal⁹.

⁸ Based on data in Fox et al., 2013, European J. Public Health, 23, 757 – 762 and ONS UK population estimate mid year 2015

⁹ Walker, M.J., Burns, D.T., Elliott, C.T., Gowland, M.H. and Mills, E.C., 2016. Is food allergen analysis flawed? Health and supply chain risks and a proposed framework to address urgent analytical needs. Analyst, 141(1), pp.24-35



Thus, a National Food Strategy must focus on continued work on optimum management of food allergens in the supply chain supported by substantially improved allergen measurement science. The Government Chemist team has a proven track record of food allergen analysis research (ELISA, MS, PCR) with international collaboration and would be keen to amplify this alongside government to help citizens make informed decisions about the food they eat and put our food system at the forefront of innovation in allergen management.

Food authenticity

A National Food Strategy should capitalise on opportunities to showcase UK science to improve standards world-wide to create safer, more authentic and secure global food supply chains.

Food fraud is a global phenomenon that does not respect borders so governments and food businesses must come together if we are to reduce the impact of fraud in our lives and allow consumers to have trust in the food they buy. The Food Authenticity Network (www.foodauthenticity.global) is the only network of its kind in the world that brings together global information on food authenticity testing, food fraud mitigation and food supply chain integrity in one convenient location. This Network presents an opportunity to show global leadership in this area.

2. Preventing diet-related disease

Good nutrition is at the foundation of good health, and we believe that healthcare and public health practitioners, as knowledge brokers, can promote nutrition to achieve better public health. LGC has teamed up with NNEdPro¹⁰ to offer an international Knowledge Application Network in Nutrition 2025 (I-KANN-25)¹¹ to promulgate high quality and scalable medical nutrition education achieving sustained impact in global healthcare systems.

Initiatives like this are important, as they allow the sharing of best practice models from around the world in one convenient on-line platform and offer the opportunity, not only to try improve national health but to influence global health through leadership.

3. Making food production more environmentally sustainable, and helping prevent climate change

The application of genomics for crop improvement has evolved from more traditional breeding approaches which relied predominantly on phenotypic selection. Recent advances in DNA sequencing technology and the establishment of next generation DNA sequencing (NGS) technologies offer the potential to rapidly accelerate the genomics based breeding of crops.

LGC works with the world's largest Agbio companies to help them select crops suited for specific issues e.g. drought or disease resistance. It is also part of large research consortia aimed at improving crop resilience e.g. African Orphan Crops Consortium¹², which is working to address hidden hunger, malnutrition and stunting in Africa through nutritious local food crops.

A National Food Strategy must include work on securing resilience for crops of importance to the UK.

¹⁰ <https://www.nnedpro.org.uk/>

¹¹ https://381eea26-d220-4a0f-84b2-f41bc52be57c.filesusr.com/ugd/957edb_6795ed1b6eea4cd1863b832a6a3ee8e6.pdf

¹² <http://africanorphancrops.org/>



4. Putting our food system at the forefront of innovation

Point of use technologies

There have been significant advances in the availability of an increasing number of Point-of-Use (POU) technologies. POU instrumentation enables the quick and cost-effective testing and screening of food to take place in real time, at or near to the point of contact with a sample (field, road-side, factory, port-side etc.).

Also, the concept of the 'consumer as analyst' has arrived, with the launch of consumer-facing measurement 'Apps', some of which are being developed for integration into smart phones. However, the robustness of these tests has been questioned, especially when designed for use by allergy sufferers who could potentially make 'life or death' decisions based on a self-obtained test result.

LGC has projects with Defra and in the Government Chemist programme to assess the use of POU devices.

A National Food Strategy must embrace new technologies that allow food businesses and regulators to work in a more agile manner to safeguard the quality, safety and authenticity of food. However, the system has to be able to ensure validation of the methods being used.

CAMS

Community for Analytical Measurement Science (CAMS)¹³ is an industrially-led, strategically connected community, dedicated to the supply of world class analytical measurement science (AMS) training, research and innovation. Crucially, it aims to support the government's industrial strategy by facilitating industrially-led research to develop and commercialise novel point-of-use measurement technologies, to handle and interpret the data they generate, and to provide a talent pool with industry-ready transferable skills for the future.

Analysis for Innovators (A4I)

A4I¹⁴ is a programme that gives UK businesses of any size, access to cutting-edge R&D expertise and facilities, through scientific organisations like the [UK's National Measurement Laboratory \(NML\) hosted at LGC](https://www.npl.co.uk/analysis-for-innovators), to solve problems that are acting as a barrier to innovation and market-access, and which have been unable to be tackled using standard technologies and techniques.

A National Food Strategy must include work that supports UK businesses to embrace new technologies either by ensuring their appropriate validation or by giving them access to world-class measurement and testing facilities, and a skilled, industry-ready talent pool, to allow them to develop a competitive edge when trading on the world stage.

20. Which of the following areas does your response best relate to? (please select all that apply)

- a) Agriculture
- b) Economy
- c) Environment
- d) Food Security
- e) Health
- f) Other (please specify below)

¹³ <https://cams-uk.co.uk/>

¹⁴ <https://www.npl.co.uk/analysis-for-innovators>