

25 October 2019

Mr Henry Dimbleby
National Food Strategy Team
Department for Environment, Food and Rural Affairs
Area SE, 2nd Floor
Seacole Building
2 Marsham Street
London
SW1P 4DF

Dear Mr Dimbleby,

The Royal Society of Biology (RSB) welcomes Defra's call for evidence on developing a **National Food Strategy for England**. Due to the breadth of the biosciences community we support, we have recently published several policy outputs where our recommendations are pertinent to construction of a National Food Strategy. These have been informed by our community of members and member organisations and I am writing to highlight these to you as sources of information. Alongside this we extend the offer of assistance to yourself and the Defra team where further detail, community expertise and insight we can provide would be helpful to development of the National Food Strategy.

We are pleased to provide brief comments under headings below, and recommend that the best outcomes can be served by a policy that takes a holistic and inclusive approach to the entirety of the food landscape.

Innovation

It is our belief that, since "the vast majority of calorific intake comes from plant products, UK expertise in plant science has an important role to play internationally to secure long-term global food security", therefore, "the plant science dividend and capacity to address fundamental challenges [in nutrition, for example], should not be understated" (1pp.16).

Animal protein also comprises part of the diet of the UK population. In the Society's view, the "**production of safe, nutritious, and affordable food**" is one of the key policy objectives in shaping livestock farming practices, alongside "the implementation of the **highest possible welfare standards** and the **protection of biodiversity and the environment**" (2pp.17). Gene editing technologies, for example, have the potential, as part of locally tailored and integrated management strategies, to overcome many of the challenges facing global food production today (2pp.7). However, access to these technologies, and their application, is variable internationally, so regulatory alignment and common standards at a global level are called for (2pp.1). "There are also of course a number of ethical issues raised specifically by the adoption of novel genetic technologies for livestock improvement [...] thus scientists should be enabled to carry out responsible research and innovation [through provision of] the right checks, balances, and training, which should be informed by a sound ethical framework and implemented through appropriate and evidence based governance and oversight mechanisms" (2pp.1-2).

We advise that it is important to achieve the right balance of fundamental, translational and applied research programmes through policy and research funding frameworks, in order to maximise our potential to develop and innovate (3pp.2 and 22, and 4pp.4). "This goal will only be achieved if researchers, farmers, land managers, consumers and food chain industries are actively involved in the debate and are empowered to inform the argument and shape the policy outcomes." (3pp.22) Further, "Government should ensure that the experience, local knowledge and creative enterprise of farmers and land managers is integrated into the development and implementation of policy and research agendas" (3pp.16).

As part of development of appropriate research funding frameworks, "the government should look for similar opportunities [to the IUK and Biomedical Catalyst grants which leverage private investment] in areas such as agri-tech and agri-food" (5pp.16).

Information and communication

Our members also advise that researchers and policy makers must continue to engage across disciplines - including with social scientists for example - and with the public, in discussions and decisions surrounding genetic technologies, and other innovation, through finding ways to communicate useful and trustworthy information. In the case of food production, such engagement and interaction must extend to farmers, but also to other producers and practitioners, for example to veterinarians, foresters and conservation managers (¹pp.16, ²pp.12).

Particularly in relation to improving innovation through supporting interaction between farmers and researchers, “many other European countries implement free and reliable locally tailored public advice, enabled through state-owned or state-affiliated research institutes. Within agriculture, for example, this has proven effective in improving farmer’s understanding of evidence behind policies and practices, whilst equally allowing them to communicate their needs to researchers” (⁶pp.14).

We recommend “support [for a] respectful, open, informed and balanced debate about the needs of animals and humans alike” (⁷pp.8) throughout the making and implementation of policy - this of course also relates to the use of animals in food production. Provision of trustworthy and accessible information to the public (²pp.1,12,17-18), and “consideration paid to trusted and independent expert opinion in Government decision-making process, and an intelligent use of public engagement, are central to informing public perception, particularly around the use of animals in research and food production” (⁷pp.8).

Workforce, careers and education

We also recommend for government to improve perceptions and “promote careers in farming and food production from an early stage in education, while simultaneously educating the public about the origin of their food”, since members of the public may not be aware of the vocations related to agriculture (and to food production), for example the roles for food analysts (³pp.17 – 18). We also advise that, “in relation to skills and labour for UK agriculture, the UK relies heavily on workers from the EEA [...] Work permits and visa schemes allowing seasonal working and semi-permanent employment arrangements may help to mitigate [the effects of Brexit]” (³pp.20).

Beyond borders

In addition to our call for regulatory alignment and common standards at a global level in relation to genetic technologies, as described above, and of import to food safety, production and transport across Europe, we advise that “The UK’s withdrawal from the EU will have complex implications for our nation’s biosecurity” (and by association, food security and related legislation and regulation). “Retaining good standards, policies, practices and monitoring methods that are consistent with those developed through EU processes will be key in facilitating the ongoing exchange of current expertise and information between EU and UK partners, allowing for best practice in efficient, collaborative research and development, which produces shared benefits across a variety of sectors of society and the economy” (including in relation to food production and consumption) (⁸pp.1).

Though “a biosecurity collaboration requirement applies to any research or trade partner” (⁹pp.9), “our physical proximity and ecological similarity to the EU and the inevitable frequency of movement of species, vehicles and commodities means that many biosecurity concerns and threats are shared” (⁸pp.1). “As a significant proportion of food consumed in the UK is imported, not just from EU Member states but also from countries out with the EU, it is vital that the safety of such foods continue to be assured”. Many EFSA employees, or expert panel members, are UK citizens, and play a significant role in contributing to food safety and to animal health. It is vital to the UK that such co-operation continues (¹⁰pp.22).

A focus on nutrition

We note that the “UN sustainable development goals (SDGs) include improving food security, nutrition and water quality whilst protecting ecosystems on land and in water. Intrinsically linked to this there is a need to realign the goals of food and agricultural policy in light of the changing patterns of dietary habits, choice and requirements, and the evidence of proven links between nutrition and many of the most common human diseases. As a member state of the WHO European Region, the UK has agreed on the WHO Health 2020 common policy framework, which frames human health and wellbeing as core public goods [...] The framework holds particular focus on decreasing disease related to unhealthy diets in European populations [...] and on

tackling new and re-emerging infectious diseases [...] through synergy between agriculture and public health sectors, enabling food safety and nutrition” (3pp.5-6).

As such, we advise that “nutrition should be a core concept in the maintenance of societal health nationally and internationally; the sustainable production and availability of a variety of nutrient rich foodstuffs is key to this. Consideration should be given to both dietary choice and to the environmental impacts of different farming systems, with an ambition to incentivise healthier and more sustainable food systems. The factors involved are numerous and their interaction is often complex, and so collaboration across sectors should be wide-ranging with consultation of the available and up-to-date evidence and expertise, including consideration of societal interest.” (3pp.26)

In order to begin to encapsulate the importance of consideration of nutrition in food chain governance, we therefore recommend that “nutritional security (an alternative descriptive measure for food security, and with relation to minimising waste in food production and consumption) should be considered as a public good, particularly in the case of staple goods, which should be affordable across society” (3pp.5).

The recently formed Academy of Nutrition Sciences¹¹ has an interest in the use of scientific expertise in this regard.

We would also encourage government to enable and strengthen cross-departmental collaborative work on a National Food Strategy, given the complexity and breadth of its remit – for example, close engagement between Defra and the Department of Health and Social Care is called for, given the latter department’s focus on obesity and healthy eating.

A focus on animal welfare standards

We welcome “Government’s commitment to high standards of animal welfare [and stress] the importance of supporting biological research in neurobiology, ethology and veterinary science, among others, to ground welfare decisions solidly on scientific evidence. Equally, we recognise the importance of public interest with regard to animal welfare” and, as stated earlier in this letter, we “support the view that more should be done to inform the public about species and setting-dependent welfare needs” (3pp.10). Additionally, we propose that “clear labelling of food – in relation to welfare standards of animal rearing, transport and slaughter – is an essential element to empower the public to make choices in support of best practice at the point of purchase, and will be instrumental to policies by which Government pays regard to public interest” (3pp.10).

Further to this, we support an approach to achieve “current best practice and standards of animal health and welfare to be maintained at all points in animal care and husbandry, including in transport between this and other nations” (12pp.2), a national food strategy must of course also incorporate this as fundamental practice, where the production and transport of livestock for human consumption are concerned.

A focus on biodiversity and the natural environment

We reiterate that “agriculture uses by far the largest land area among industries. Agricultural land use comes with significant externalities that are not adequately accounted for at present. Agricultural systems are recognised as contributing to water contamination, damage to wildlife, emissions and soil erosion, among other externalities, with food transport contributing significantly to road traffic. [...] Government should seek to address both historic (if still relevant) and current externalities [of UK agriculture]” (3pp.12).

Damage to biodiversity is one such externality of far-reaching importance for future food production. “Safeguarding of biodiversity has important economic implications, specifically because it is a key driver of a multitude of ecosystem services, such as soil erosion control [or] plant nutrient concentration” (3pp.12). For example, “While agriculture poses a threat to some insect populations, it also benefits from the ecosystem services provided by insect biodiversity, for instance in the pollination of some crops, and in pest control [...] As well as increasing the quality, quantity and value of crop production, pollination is vital to maintain the diversity of foods necessary for healthy diets, given that crop plants that depend on pollinators provide large proportions of the vitamins and other nutrients in human diets. [...] Pollinator-friendly farming practices must [therefore] be supported to halt and reverse these [insect] declines” (3pp.11).

In relation to environmental principles to underpin future policy making, we state that “‘principles of environmental net gain’, as per the recently published *25 Year Environment Plan*, or of sustainable

development, should ensure that comprehensive environmental impacts of development projects [such as may be implemented within a national food strategy policy framework] are assessed in favour of benefit to the environment. Such projects should meet current needs, without detrimentally impacting the ability of future generations to meet theirs, and should make provision for restoration of degraded land into optimal habitats for wildlife. Adhering to principles based on sustainability can underpin other principles, by promoting the efficient use of limited resources [...] The success of sustainable development as an environmental reference term is subject to environmental impacts not being placed secondary to economic growth.” (6pp.3).

Further, “to ensure positive environmental outcomes there should be an overarching principle of ‘biodiversity net gain’ to run parallel to the ‘environmental net gain’ approach, to avoid biodiversity being neglected in favour of other aspects of natural capital¹³ (see also 3pp.6 and 14) that could be more directly ‘valued’ financially. This ‘biodiversity net gain’ should also be substantially monitored taking into account the whole extent of biodiversity, and not limited to protection of individual or iconic species. Biodiversity encompasses all areas of life, and the importance of microbial diversity for healthy terrestrial and aquatic environments should be considered, along with plans for conservation. This is likely to be of significant importance in soil quality, which is an identified priority” (3pp.13), and is of course of key importance in many sectors of agricultural food production.

“Implications for biodiversity offsetting should, however, be considered: [it] is important to ensure that any damage is not simply relocated to geographically differing locations or solely provisioned through distant ‘environmental currencies’ (e.g. replanting trees).” (6pp.6). This point is particularly pertinent given that the scope of Defra’s National Food Strategy will extend only across England, despite the fact that our natural resources are shared across the UK, and often agricultural externalities (such as air pollution) can extend across borders. In relation to the latter point, we additionally recommend that, “judicious application of the polluter pays principle, with an emphasis on an extended producer responsibility strategy, could provide an effective and fair underpinning for future policymaking. Combined with a greater emphasis on consumer responsibility, this could deliver environmental benefits.” (14pp.2, see also 6pp.10).

In general, we advise that “adoption of an evidence-led approach, [which] uses natural capital as a tool to quantify the benefits of nature for society [...including healthy soil, food products and freshwater systems], enables an accessible route to accomplish the difficult task of valuing many elements of the natural environment. For this principle to be adopted successfully there must be comparable science-based metrics for valuing natural capital, with processes in place for monitoring and implementation [...in addition to] recognition that the value of natural capital is not purely financial” (14pp.11, see also 3pp.14).

Overall, “a central aim of decision-making should be to attain peak performance, productivity and efficiency using limited resources and whilst enabling maintenance and improvement of public, animal, plant and environmental health, and animal welfare, through sustainable management practices” (14pp.3, see also 3pp.22). In addition the policy must have regard to the overseas footprint of our national activity and have regard to minimising harms and unintended consequences both at home and abroad.

Please contact me should you wish to request any further detail on the points raised in this letter, or on aspects revealed by your inquiry.

Yours sincerely,



Dr Mark Downs CSci FRSB, Chief Executive

The Royal Society of Biology (RSB) is a single unified voice, representing a diverse membership of individuals, learned societies and other organisations. We are committed to ensuring that we provide Government and other policymakers, including funders of biological education and research, with a distinct point of access to authoritative, independent, and evidence-based opinion, representative of the widest range of bioscience disciplines.*

Appendix

* A full list of the member organisations of the Royal Society of Biology can be found here:

<https://www.rsb.org.uk/membership/organisational-membership>

References

¹ The *Growing the Future* Report, 2019: <https://www.rsb.org.uk/policy/groups-and-committees/ukpsf/about-ukpsf/growing-the-future-report>

² Response from the RSB to the Nuffield Council on Bioethics call for evidence on 'Genome Editing and Farmed Animals', 2019:

https://www.rsb.org.uk/images/Policy/RSB_response_to_the_Nuffield_Council_on_Bioethics_-_Genome_editing_and_farmed_animals_submitted.pdf

³ Response from the RSB to Defra's consultation on "Health and Harmony: the future for food, farming and the environment in a Green Brexit", 2018: https://www.rsb.org.uk/images/RSB_response_to_Defra_consultation_on_Health_and_Harmony_submitted.pdf

⁴ Response from the RSB to the BEIS consultation on the UK Bioeconomy, 2017:

https://www.rsb.org.uk/images/RSB_response_to_the_BEIS_Bioeconomy_consultation_Final_response.pdf

⁵ Response from the RSB to the Science and Technology Committee of the House of Commons' inquiry on the balance and effectiveness of research and innovation spending, 2018:

https://www.rsb.org.uk/images/article/policy/RSB_response_to_HoC_STC_inquiry_on_research_and_innovation_spending_submitted.pdf

⁶ Response from the RSB to the Defra consultation on Environmental Principles and Governance after EU Exit, 2018:

https://www.rsb.org.uk/images/RSB_response_Defra_Environmental_Principles_inquiry_submitted.pdf

⁷ Response from the RSB to the Defra consultation on the draft Animal Welfare (Sentencing and Recognition of Sentience) Bill, 2018:

https://www.rsb.org.uk/images/RSB_response_Defra_draft_Animal_Welfare_Sentencing_and_Recognition_of_Sentience_Bill.pdf

⁸ Response from the RSB to the EU Energy and Environment Sub-Committee of the House of Lords' inquiry on Brexit: plant and animal biosecurity, 2018:

https://www.rsb.org.uk/images/RSB_response_to_the_HoL_EU_EESC_inquiry_Brexit_plant_and_animal_biosecurity_for_submission.pdf

⁹ Response from the RSB to Professor Adrian Smith's call for evidence on future frameworks for international collaboration on research and innovation, 2019: https://www.rsb.org.uk/images/RSB_Response_to_Professor_Adrian_Smith_Evidence_Call_for_submission.pdf

¹⁰ Response from the RSB to the Science and Technology Committee of the House of Lords' inquiry on Life Sciences and the Industrial Strategy, 2017: https://www.rsb.org.uk/images/RSB_response_Life_Sciences_Industrial_Strategy_inquiry_submitted.pdf

¹¹ Website for the Academy of Nutrition Sciences: <https://www.academynutritionsciences.org.uk/>

¹² Response from the RSB to Defra's call for evidence on controlling live exports for slaughter and to improve animal welfare during transport after the UK leaves the EU, 2018:

https://www.rsb.org.uk/images/article/policy/RSB_response_to_the_Defra_call_for_evidence_on_controlling_live_exports_for_slaughter_or_submission.pdf

¹³ Website for the Natural Capital Initiative, a special interest group of the RSB: <https://www.naturalcapitalinitiative.org.uk/about/>

¹⁴ Response from the RSB to Defra's consultation on the Fisheries White Paper: sustainable fisheries for future generations, 2018:

https://www.rsb.org.uk/images/Policy/RSB_letter_of_response_to_FWP_for_submission.pdf

Collated responses from the Royal Society of Biology to further previous consultations and inquiries can be found here:

<https://www.rsb.org.uk/policy/consultations/consultation-responses>