

## Written evidence submitted by the James Hutton Institute

### Executive Summary

#### 1. What the effect of the various models available for the UK's future relationship with the EU will be on UK science and research, in terms of:

- **Collaboration**
  - A new relationship with EU institutions and partners should expand on existing relationships with EU research infrastructure (e.g. European Commission Joint Research Centre), and the range of science advisory groups in which UK researchers play a significant role (e.g. EFSA, scientific review panels, High Level Group on Scientific Advice Mechanisms on which the UK is represented)
- **Free movement of researchers and students**
  - The position of the UK in bids for competitive funding from EU and international sources, has been strengthened by its unique opportunity to exploit global connections in science, trade and culture, and importance of the English language (e.g. EU project coordination). These have attracted high quality researchers and students from EU Member States to the UK, significantly simplified by free movement within the EU.
  - Negotiations of new arrangements provides an opportunity to promote UK science excellence and its contribution to industry and business as a central element of the reported wish of the UK Government to be a global leader in free trade.
- **Access to funding**
  - Access to funding from EU sources is important for improving scientific understanding and the financial support it provides to research organisations.
  - If future routing of funding was managed through a UK body (e.g. UKRC) then care is required to ensure continuity of eligibility for organisations which do not have automatic access to research council funding, such as the James Hutton Institute.
- **Access to EU-funded research facilities, both in the UK and abroad**
  - Enable effective ongoing relationships with the EU Joint Research Centre which facilitate internationally important collaborations (e.g. European Soil Data Centre), and provide mechanisms which increase the impact of research funded by Scottish and UK Governments and their agencies to inform international agreements.
- **Intellectual property and commercialisation of research**
  - Seek a relationship with the EU which does not disadvantage business opportunities with current and future clients in EU Member States, no changes in existing protection of intellectual property, and no increase in complexity or overhead for protecting new intellectual property.

#### 2. What the science and research priorities for the UK Government should be in negotiating a new relationship with the EU.

- The UK should seek participation in discussions about the programme and structures of the successor to Horizon 2020, reflecting an intention to maintain a strong working relationship with partners in the EU and EEA.
- Scientific priorities should address internationally agreed challenges (e.g. climate change, biodiversity, UN Sustainable Development Goals; IPM/pesticide reduction targets) which are

supported by international agreements (e.g. Aichi Biodiversity Targets of the Convention on Biological Diversity).

- The priorities should also have a focus on the growing the EU (bio) economy within which the UK would make a full contribution.
- Relations should be maintained with functional units of the EU research programmes, such as the European Research Council Marie-Sklodowska-Curie Actions which contribute to the delivery of the objectives the UK Government and the devolved administrations of international leadership, competitive industry, and social justice.

### **3. What science and technology-related legislation, regulations and projects will need to be reviewed in the run up to the UK leaving the EU.**

- Many regulations relate to international protocols or agreements for which the UK or Scottish Government have set targets. These can be expected to remain irrespective of UK membership of the EU (e.g. Scottish Government targets for reducing GHGs and pesticide use).
- Social, natural and interdisciplinary science informs a broad range of regulations with environmental or rural considerations, such as the Common Agricultural Policy Pillar 2, implementation of the Water Framework Directive, food safety and pesticide legislation.

### **4. The status of researchers, scientists and students working and studying in the UK when the UK leaves the EU, and what protections should be put in place for them.**

- Existing staff and students should not be disadvantaged by a change in status of UK membership of the EU.
- Stresses on staff created by uncertainty in status (e.g. employment rights post secession of the UK from the EU) are alleviated as rapidly as practical.
- No change is made to their eligibility for continuity of employment on the same conditions as at appointment to ensure the completion of research contracts, and opportunities to designing new proposals under whatever new structures have been put in place.

### **The opportunities that the UK's exit presents for research collaboration and market access with non-EU countries, and how these might compare with existing EU arrangements.**

- Negotiate agreements with non-European countries for bilateral research collaborations to engender increased cooperation between UK researchers and other parts of the world.

### **What other measures the Government should undertake to keep UK science and research on a sound footing, with sufficient funding, after an EU exit?**

- Implement a comprehensive communication strategy emphasising that UK industry and science are 'open for business'.

## **Introduction**

The [James Hutton Institute's](#) response to the Science and Technology Committee's Call for Evidence is based on its extensive experience in participation in contributing to the science base and infrastructure of the European Union, and participation in its research programmes over the last 30 years as beneficiaries and evaluators.

Our submission aims to inform the UK Government and devolved administrations in their negotiation of new arrangements between the EU and its Member States. We are seeking continuity of collaboration and securing of funding through the suite of mechanisms currently available, and identifying new opportunities into the future.

In recent years, the Institute has provided invited convenorships or membership on influential European advisory groups. Notable amongst these is the EU [Joint Programme Initiative \(JPI\) on Water](#); [European Food Safety Authority](#) (3 of 10 Panels); [EU European Innovation Partnerships](#) of DG AGRI (4 of 20 Panels), for the EU agricultural research agenda to support CAP, Bioeconomy and Biodiversity Strategies, and EU 2030 Climate Framework; EU Joint Research Centre [New Plant Breeding Technologies Group](#); European Soil Bureau; Board of [European Plant Science Organisation \(EPSO\)](#), contributing to development of agriculture, horticulture, forestry and biodiversity in Europe. Delivering high impact from research projects is informing strategic thinking and options, such as the roles and functions of advisory services in Europe as part of the process of innovation generation and problem solving set out in the 'Agricultural Knowledge And Innovation Systems Towards The Future', drawing on findings from the [ProAKIS](#) project.

Under the EU's Framework 7 Programme, the James Hutton Institute secured €8 million funding. It is eligible to apply to all relevant EU funding streams but not all equivalents from UK funding sources. As such, the EU Research and Innovation programmes are key sources of revenue, comprising almost 23% of newly obtained funding since formation of the Institute in 2011.

In the first two years of the Horizon 2020 funding programme the Institute secured over €8.3m, in topics across a spectrum of the bio-economy research agenda which is common to the European Union, Scottish and UK Governments. In 2015, Scottish research organisations were partners in 8 of the winning bids of the 15 projects funded by the EU on aspects of food security, sustainable agriculture and forestry, marine, maritime and inland water research, and the Bioeconomy, including three to the James Hutton Institute. Such a level of success illustrates the types of opportunities which are being taken by Scottish research organisations and in so doing promote Scotland as a centre of innovation and creativity.

The Institute's perspective is also informed by its scientific and technical support to Scottish Government on [reforms and implementation of the new Common Agricultural Policy from 2015](#), field/business level, and sectoral and/or regional levels. This included options for changing to area-based CAP payments (2013), payment region implementation (2014), review of Greening (2015/16), and designation and differentiation of payments within [Areas of Natural Constraint \(2016\)](#). Therefore, the organization is in a unique position to understand the benefits of linking research with the needs of policy, practice and industry.

## Response to Consultation Questions

### 1. What the effect of the various models available for the UK's future relationship with the EU will be on UK science and research, in terms of:

- **Collaboration**

The well documented success of UK organisations in securing funding from EU research programmes (e.g. The Royal Society report on [The role of the EU in funding UK research](#)) reflects not only the science excellence but also the capability to collaborate with industry, policy and civic society to ensure the relevance, high impact and legacies of research. These are key requirements for achieving success in programmes of European funding such as Horizon 2020 and at which UK research teams have become highly proficient. Together, this four-way relationship has demonstrated understanding of the critical importance of collaboration across borders, disciplines and responsibilities to the advancement of science. The requirement of such collaboration in H2020 programmes is, in part, a reflection of the input of UK interests to their design.

Collaboration is broader than through research projects. It includes contributions to joint initiatives in which the European Commission Joint Research Centres take a leading role,

participating in panels which evaluate research programmes and individual proposals, joint supervision of post-graduate students irrespective of funding through EU mechanisms, and participation in science advisory panels.

Negotiation of a new relationship with EU institutions and partners should present a case for expanding existing relationships with EU research infrastructure (e.g. European Commission Joint Research Centre), and the range of science advisory groups in which UK researchers play a significant role. Examples of such engagement are the European Innovation Partnerships of [DG AGRI](#) invited participation of Scottish research Institutes in 5 of 20 Focus Groups on priority topics, more than any other area of Europe, and the [European Food Safety Authority](#) (EFSA) on topics of significant societal interest such as environmental risk assessments of cultivation of genetically modified plants.

- **Free movement of researchers and students**

Intrinsic to participation in research with European partners is the network of engagement which sees researchers move between collaborating organisation in science, industry and increasingly in policy and civic society. Such engagement often takes the form of exchange visits or placements in partner countries to enable researchers to take advantage of leading edge equipment or expertise, as well as the importance of developing interpersonal understanding and relationships through bilateral and multi-lateral meetings, workshops and conferences. It is key to building national and European capability in science and the ability to translate science to stakeholders and actors in industry, policy and civic society. Taken together, such engagement forms an integral part of the process of development of scientific ideas and the exchanges within European networks has been a core element in the development of a generation of researchers over the last 40 years.

Such interactions are a *modus operandi* in much of the global scientific community, of which the UK is a core participant. UK research organisations have been able to exploit the country's rich heritage of connections across the world and the importance of the English language in international science and public affairs. European partners have become an increasingly important part, significantly simplified by the free movement of researchers and students from EU Member States. This in turn has strengthened the position of the UK in bids for competitive funding from EU and international sources, providing evidence of the depth and productivity of international collaborations.

The differences between alternative existing models of scientific collaboration may be relatively limited. However, negotiating new arrangements with countries globally, as well as the EU and EEA, provides an opportunity to promote UK science excellence and its contribution to industry and business as a central element of the reported wish of the UK Government to be a global leader in free trade.

- **Access to funding**

The development of mechanisms which enable access to such funding into the future is important both to improve scientific understanding to address societal challenges which respect no administrative boundaries such as climate change, and for the financial support it provides to research organisations. A number of models can be considered, informed by agreements in place for researchers in the existing fifteen Associated Countries.

However, if the routing of funding were to change such that it was managed through a UK body (e.g. UKRC) then care is required to ensure continuity of eligibility. For example, the James Hutton Institute is eligible for funding through all EU programmes but is not eligible for most funding routed through UK Research Councils, unless by special arrangement (e.g. the Scottish Government contributing to a specific programme of research). So, follow-on funding arrangements should take full account of eligibility of organisations for funding.

- **Access to EU-funded research facilities, both in the UK and abroad**

The James Hutton Institute collaborates closely with the EU Joint Research Centre, principally the centres at Ispra (Italy) on issues relating to soil and land use (including as Chair of the European Soil Bureau Network located at JRC Ispra), and Seville (Spain) on issues relating to agriculture and food security. These links provide which facilitate internationally important collaborations to which UK organisations are recognized as leading contributors (e.g. European Soil Data Centre). They also provide valuable conduits for communicating findings from research funded by Scottish and UK Governments and their agencies which informs European and international dialogue on international agreements or protocols to which the EU, and UK and Scottish Governments are signatories or to which they have declared commitments (e.g. delivery of the UN Sustainable Development Goals, Paris Agreement within the United Nations Framework Convention on Climate Change).

- **Intellectual property and commercialisation of research**

The corporate strategy for James Hutton Institute is to identify, filter and focus on the best ideas for commercialisation. Such ideas are developed for global relevance, markets and clients of which includes those in EU Member States, the UK and Scotland. We would seek a relationship with the EU which did not disadvantage business opportunities with current and future clients in EU Member States. It would be desirable if the negotiated outcome in relation to intellectual property was one of no change in existing protection, and no significant increase in complexity or overhead for arranging the protection of new intellectual property (e.g. European Patent protection).

## **2. What the science and research priorities for the UK Government should be in negotiating a new relationship with the EU?**

The research priorities and mechanisms for the successor programme to Horizon 2020 will be being developed over the latter period of negotiations of the new relationship between the UK and EU. These will also be informed from the evaluation process of the working of the Horizon 2020. The UK should seek participation in such discussions reflecting an intention to maintain a strong working relationship with partners in the EU and EEA.

Scientific priorities should reflect shared investment in addressing global challenges (e.g. climate change, biodiversity, UN Sustainable Development Goals) supported by relevant international agreements (e.g. Aichi Biodiversity Targets of the Convention on Biological Diversity); and boosting economic growth through science and innovation (e.g. primary and secondary food production, and provision of safe, nutritious, high quality and affordable food across all stages of the food supply chain).

A relationship should be maintained with the functional units of the European and EU research programmes, notably:

- European Research Council in support of frontier research, cross-disciplinarity and pioneering ideas in new and emerging fields;
- Marie-Sklodowska-Curie Actions to encourage transnational, inter-sectoral and interdisciplinary mobility;
- COST Association for facilitating trans-national cooperation among researchers, engineers and scholars across Europe;
- European Research Area.

These contribute to the delivery of the objectives the UK Government and those of the devolved administrations of international leadership, competitive industry, and social justice.

### **3. What science and technology-related legislation, regulations and projects will need to be reviewed in the run up to the UK leaving the EU?**

The science of the James Hutton Institute informs the design and implementation of a range of legislation and regulations for the European Union, UK and Scottish Governments. The science base informing the development of regulations or thresholds is funded by a broad portfolio of sources, one of which is the EU Horizon 2020 Programme and others are funded by individual EC Directorates General. Such regulations come under the remits or authority of public agencies or departments of government. In relation to the research and remit of the James Hutton Institute several such regulations or thresholds relate to international protocols or agreements for which the UK or Scottish Government have set targets. These can be expected to remain irrespective of UK membership of the EU (e.g. Scottish Government targets for reducing GHG emissions).

A broad range of regulations with environmental or rural considerations will require review and UK versions developed, such as the Common Agricultural Policy Pillar 2, implementation of the Water Framework Directive, food safety and legislation on pesticide control. In considering successor arrangements it should be noted that many of them are informed by combinations of social, natural and interdisciplinary sciences, and understanding of the social and ecological systems within which they operate and not in isolation.

At the level of individual European research projects in which James Hutton Institute is involved, it is not anticipated that the status of any will require to be reviewed, based on the recent commitment of the UK Government to honour funding of existing and new projects up to a set date.

### **4. The status of researchers, scientists and students working and studying in the UK when the UK leaves the EU, and what protections should be put in place for them.**

The heritage of the James Hutton Institute as a world leading research organisation has been built upon attracting the brightest and best staff in their fields irrespective of nationality and background. The current compliment of staff and students is drawn from every continent of the world. Of importance in the development of future arrangements with the EU is that: (a) existing staff and students should not be disadvantaged by a change in status of UK membership of the EU; (b) stresses on staff created by uncertainty in status (e.g. employment rights post secession of the UK from the EU) are alleviated as rapidly as practical; (c) no change is made to their eligibility for continuity of employment on the same conditions as at appointment to ensure their opportunity to complete research contracts for the benefit and fairness to all of the researcher, funder and employer, and to designing new proposals under whatever new structures have been put in place.

Changes in the status of researchers which then triggered significant number to leave the UK, even if only in the short term, would compromise the capabilities of UK research over the longer term due to the capability gap which would emerge and take time to fill.

### **5. The opportunities that the UK's exit presents for research collaboration and market access with non-EU countries, and how these might compare with existing EU arrangements.**

Agreements should be considered with non-European countries for bilateral research collaborations to engender increased cooperation between UK researchers and those in other parts of the world. This would exploit the experience and acknowledged success of UK research teams in securing funding from the European Research Frameworks, increasing the attention towards addressing scientific and technical challenges outwith Europe. It could provide an effective element of the wider bilateral agreements and trading relationships expected to be developed with countries such as the USA, Canada, Australia, China and

India, all of which are examples of world leading research. This would also support delivery of the UN SDGs, align with strategies for overseas development.

**6. What other measures the Government should undertake to keep UK science and research on a sound footing, with sufficient funding, after an EU exit?**

The UK Government and devolved administrations should design and implement a comprehensive communication strategy emphasising that UK industry and science are 'open for business', and actively engaged seeking new opportunities for collaborative working through existing EU funding mechanisms and more broadly. This should be done urgently to reduce risks associated with research organisations losing confidence in UK partners as members of consortia in the run-up to enacting Article 50. Funds may also be required to enable UK partners to 'buy in' to future research activities of the European Union.

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