Dasgupta Review on the Economics of Biodiversity – Call for Evidence

1. Background

In March 2019, a new independent global review was announced by HM Treasury to assess the economic value of biodiversity and to identify actions that will simultaneously enhance biodiversity and deliver economic prosperity. This review on the *Economics of Biodiversity* is being led by Professor Sir Partha Dasgupta.

The review will report ahead of the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity in China in October 2020. The evidence in the review aims to help shape the international and UK response to biodiversity loss, including the successors to the Aichi Biodiversity Targets. It also aims to inform global action to deliver the Sustainable Development Goals. The primary audiences for the review are economic and finance policy and decision makers who significantly influence the response to biodiversity loss through policy, finance and investment decisions.

The review has been asked to examine the evidence on:

- How biodiversity supports sustainable economic growth;
- The implications of further biodiversity loss for the prospects for economic growth over the coming decades, accounting for the interaction with other aspects of environmental degradation, including climate change;
- The impact, effectiveness and efficiency of existing national and international actions and arrangements to limit and reverse the loss of biodiversity and their impact on economic growth.

The review has been asked, based on this evidence, to provide an assessment of:

- A range of scenarios for enhancing global biodiversity compared with business as usual, focusing on the medium to long-term perspective and the relationship with economic growth; and
- The range of best practices, initiatives and interventions for industry, communities, individuals and governments that can simultaneously achieve the goals of enhancing biodiversity and delivering sustainable economic growth. This will draw out implications for the timescales for action and the range of scenarios above. It will recognise the interactions with climate change mitigation and adaptation needs and opportunities.

This Call for Evidence will contribute to the Dasgupta Review's advice. The Dasgupta Review will be based on a thorough consideration of robust, relevant, up-to-date evidence, including the existing work of the Intergovernmental Platform on Biodiversity and Ecosystem Services (IPBES), the Millennium Ecosystem Assessment and The Economics of Ecosystems and Biodiversity (TEEB).

The review team is currently using the following definition for biodiversity:

Biodiversity – Biodiversity is the variety of life in all its forms, and at all levels including genes, species, and ecosystems. Different species combine together into communities that interact with the physical world to create ecosystems. The combination of all the ecosystems in the world and the spaces they occupy make up the biosphere.

2. Responding to the Call for Evidence

We encourage responses that are brief and to the point. Please provide a maximum of 400 words per question. You may also add links to supporting evidence. Please focus on sending only the best available evidence. You do not need to answer all the questions. Please answer only those questions where you have specific expertise and evidence to share. The Review Secretariat may follow up for more detail where appropriate.

The consultation period will run between 14 August 2019 and 6 November 2019. Copies of this document may be found on gov.uk.

Please send responses to any, or all, of the questions below to: biodiversityreview@hmtreasury.gov.uk.

Please indicate if you are responding in a personal capacity or on behalf of a company or organisation. You must disclose all financial or other links between you or your organisation, and any company operating in a sector in, or connected with, the scope of our review. This should include stating whether any research you have ever conducted has received commercial funding from a company of this kind.

The Review Secretariat may choose to publish responses in full or in summary form. If you would not like all or part of your response to be published, please explicitly mark it as 'not for publication' and we will not publish it. However, as explained in the notice after the questions, we may be required to disclose this information under FOIA.

Please note the important information following the questions that sets out how your response will be treated and how any personal data you provided which identifies you or third parties will be handled.

3. Question and response form

When responding, please provide answers that are as specific and evidence-based as possible, providing data and references if needed. Please limit your response to a maximum of 400 words per question plus links to the best supporting evidence.

Part 1: Biodiversity and Ecosystem Service Science and Evidence

Question 1 (Biodiversity and Ecosystem Service Science): IPBES assessments and GEO6 will form an important part of the Review's assessment of the state of biodiversity, the biosphere and its ability to deliver ecosystem services. What further evidence should the Review consider in this area? What does the scientific evidence on global biodiversity and ecosystem condition decline suggest about the Earth's ability to continue providing services essential to human prosperity over different time periods?

ANSWER:

Biodiversity and human activity in the UK are closely connected, many thousands of years of human farming and land management has shaped the mosaic landscape we see in the UK today. The Leverhulme funded 'Biodiversity and human land use change in the British Isles' project coordinated by the University of Plymouth is using long-term environmental records to explore how land-use and population change has impacted upon land-cover and biodiversity patterns https://www.plymouth.ac.uk/research/centre-for-research-in-environment-

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society/biodiversity-and-human-land-use-change-in-the-british-isles . Understanding the relationship between biodiversity and human landuse through time is essential for managing and planning for future biodiversity and land use needs. There is a close relationship between sites and landscapes of historic interest and biodiversity, e.g. over 58% of National Nature Reserve sites contain at least one designated heritage asset. The biodiversity value and the history of sites are often closely linked. Many priority habitats are closely related to historic landscapes and heritage assets – e.g. parkland and wood pasture, calcareous grassland, orchards, hedgerows

Consideration must also be given to gardens, botanic gardens, and arboreta broaden this to global biodiversity of historic interest. The DCMS Select Committee looked at garden tourism this year and the Government response is published at https://publications.parliament.uk/pa/cm201719/cmselect/cmcumeds/2678/2678.pdf Garden tourism is 'currently worth almost £3 billion in GDP to the UK' and has further potential to grow.

Given the symbiotic relationship between the natural and historic environments, biodiversity cannot be valued in isolation, and the economic value of historic and cultural landscapes need to be considered too. This reflects that, frequently, cultural capital is needed to create ecosystem services (Gorg, 2007; Chan et al ,2012;Jones et al, 2016). Hence, the Review should consider the relation between cultural and natural capital, how ecosystem services depend on cultural services and people's actions, but also the ways in which the historic environment provides other services (such as regulating services) that support ecosystems.

Part 2: Biodiversity and Economic Prosperity

Question 3 (Biodiversity and Economic Prosperity – Conceptual Framework): Biodiversity supports the provision of many ecosystem services, which are important for economic prosperity and growth. Economic growth also affects the demand for, and supply of, the Earth's resources. What conceptual frameworks and typologies clearly describe the relationship between biodiversity, ecosystem productivity and resilience, ecosystem services, economic prosperity and economic growth? Where have these frameworks been applied to reveal critical relationships? What are the most critical aspects of these relationships for the Dasgupta Review?

ANSWER:

Biodiversity supports the provision of many ecosystem services, but this would not be possible without human action, which is embedded in a cultural environment. For the UK environment the biodiversity supported cannot be separated from the

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history of that environment – it has been created by the actions and activities of people over millennia. Understanding the long term co-relationship and co-dependencies of historic practice, historic landscape character is critical to successful future biodiversity management. Historic England has a number of reports not quite yet in the public domain that address this, we would be happy to provide them for the purpose of this review. It is the interaction between biodiversity and cultural services that defines the ecosystem productivity and thus the ecosystem services it produces. This interaction might lead to sustainable economic growth and economic prosperity or it might be conducive to an overexploitation of natural resources and the production of negative externalities which result in biodiversity loss.

Against this backdrop, the most critical aspects for the Dasgupta Review are the relationships between biodiversity and cultural services and ecosystem services. This would include a typology of the different types of relationships and how they impact on economic growth and biodiversity.

The main message is that cultural services are an important servicing element of ecosystem services. However, assessments are often biodiversity-led and these services misinterpreted and consequently undervalued. Historic England approaches cultural services as a critical relationship to review.

Question 4 (Biodiversity and the SDGs): What are the links between biodiversity and economic prosperity that are most critical to synergies and trade-offs across the SDGs? How should sustainable economic growth be defined and measured given the evidence of how the SDGs and economic prosperity are affected by biodiversity loss? The review is interested in relevant links with biodiversity and economic growth across all the SDGs, particularly climate mitigation and adaptation, poverty reduction, food production, human health and wellbeing, consumption and production, and gender and broader inequalities.

ANSWER:

The heritage sector's 'Heritage & Society' report (2018) https://historicengland.org.uk/research/heritage-counts/heritage-and-society/ presents evidence on the ways that the historic environment benefits individuals and communities. It is gathered from a wide range of reliable sources including major household panel surveys, systematic literature reviews, bespoke evaluation studies and public opinion surveys. The evidence is structured around

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seven topics:

- England's historic environment is enjoyed by millions
- Members of the public deeply value the historic environment
- The historic environment is important for our health and wellbeing
- The historic environment creates a strong sense of place
- The historic environment influences how we perceive places
- The historic environment brings people together
- The historic environment inspires learning and understanding

Parks, green spaces and trees in our towns and cities have an important role in climate change adaptation and biodiversity yet they are under threat from funding cuts and poor upkeep undermining their current and potential functionality. These multipurpose sites are important in the health and wellbeing, social inclusion and cohesion of our communities.

The relationship between the SDGs, cultural heritage and biodiversity are important – cultural practices affect (both supporting and threatening) biodiversity and all of the SDGs. Unesco makes a compelling case for putting culture at the heart of the SDGs https://en.unesco.org/courier/april-june-2017/culture-heart-sdgs

Part 3: Causes of Biodiversity Loss

Question 10 (Market and Institutional Failures): What are the main market and institutional failures affecting biodiversity? What is the best evidence (including case examples) that illustrate these failures?

ANSWER:

The main market failures affecting biodiversity can be classified into two groups: externalities and public goods (Helm and Hepburn, 2012). On the one hand, biodiversity provides many positive externalities in the form of social benefits, which cannot be fully captured by any private agent. This leads to an underproduction of biodiversity. On the other hand, the market overproduces goods that produce negative externalities. This is because the benefits for a private agent do not take into account the negative effects for the society. The result is that biodiversity is damaged.

Question 10 (Market and Institutional Failures): What are the main market and institutional failures affecting biodiversity? What is the best evidence (including case examples) that illustrate these failures?

Biodiversity is also a public good. It is non-rival since the enjoyment in the existence of species by one person does not affect other people's enjoyment. It is also non-excludable as it is usually an open-access good. Due to these public good characteristics, the marginal price of biodiversity is zero. This does not create private incentives to invest in its provision.

The market failures that affect biodiversity provide rationale for the government intervention. A good example are agri-environment schemes such as Countryside Stewardship – which in addressing multiple environmental objectives (such as habitats and species, water quality, but also heritage and landscape) - also illustrate the multifunctional nature of land and the symbiotic relationship between environmental public goods.

The best evidence that illustrates institutional failures in addressing market failures are the severe government cut backs in local authority funding to public parks. Green space provides many positive externalities. It contributes to manage overheating as it can provide shading and reduce the Urban Heat Island effect. It also improves drainage and surface water flood risk (if implemented properly) and it brings a host of wider benefits to people and wildlife (https://www.theccc.org.uk/wp-content/uploads/2019/07/CCC-2019-Progress-in-preparing-for-climate-change.pdf) .

In a similar vein to biodiversity, there is underinvestment in the historic environment. Historic assets bring many positive benefits to society that cannot accrue to any private agent. They bring positive externalities for passers-by, who gain pleasure from looking to the aesthetic or historical qualities of historic assets (Throsby, 2010). They also enable to learn from the past, to convey symbolic meaning and to forge communities' identities. As public goods, they are open access and their enjoyment by one person does not affect the enjoyment by others. The Heritage at Risk statistics (https://historicengland.org.uk/advice/heritage-at-risk/findings/) illustrates the consequence of these types of market failures. There are 5,073 historic buildings at risk, including 1,462 buildings and structures, 2,089 archaeological entries and 501 conservation areas in England in 2019.

Part 4: Actions to Tackle Biodiversity Loss and Support Economic Prosperity

Question 16 (Fiscal Policy and Regulation): What are strong examples of fiscal and regulatory policy instruments that have simultaneously enhanced biodiversity and supported economic prosperity? What is the best evidence on the impact and effectiveness of these actions? The review is interested in examples at all scales, including regulation, planning, taxation and government spending, including subsidies.

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ANSWER:

From a historic environment perspective, the Countryside Stewardship agri-environment scheme https://www.gov.uk/government/collections/countryside-stewardship-get-paid-for-environmental-land-management must be the strongest example of incentives for the private sector. Continuity of the scheme has been important in developing understanding about its aims and integration with individuals' own business strategies, but it has also led to behavioural change, encouraging farm businesses to become more economically efficient and environmentally sustainable. Less well known, the tax incentives for heritage assets like conditional exemption from Inheritance Tax https://www.gov.uk/guidance/tax-relief-for-national-heritage-assets have been important in keeping historic estates, landscapes and collections intact.

In a similar vein, VAT exceptions or reduced VAT rates for repair and maintenance of the built historic environment motivates the refurbishment of buildings rather than the demolition of existing ones to construct new. This helps to reduce the carbon footprint, which contributes to the preservation of the biodiversity (forthcoming publication by Historic England). At the same time, it contributes to economic prosperity. The Experian research report (http://resources.fmb.org.uk/docs/VATResearchFinal.pdf) shows that reducing the VAT rate to 5% on all housing renovation and repair work between 2015 and 2020 would have had the following impact:

- A total stimulus effect of more than £15.1bn in the UK economy as a whole;
- 42,050 extra full-time equivalent construction jobs by the end of 2020;
- An additional 53,430 jobs in the wider economy by the end of 2020;
- A total of 95,480 extra jobs in the UK by the end of 2020;
- Up to 3,586 new construction jobs in Scotland; 1,475 in Wales; and 416 in Northern Ireland;
- Total extra expenditure of around £1.08bn on energy efficiency measures;
- A potential saving of up to 237,128 tonnes of CO2 as 91,660 homes are retrofitted with loft and wall insulation, double glazing and energy efficient boilers.

Question 19 (Technology): What technologies are proving effective for ecosystem restoration and management while also supporting economic prosperity? What is the role for technological change in the short, medium and long-term to improve consumption and production efficiency? Note the review is interested in technologies across a broad range of sectors that have implications for biodiversity e.g. food production technologies.

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Emerging precision farming techniques – which minimise the need for inputs (such as fertilizer and fuel), improve crop yields, but at the same time minimise soil disturbance, (and in so doing help to protect soils – and through this buried archaeology – reduce compaction and water run-off and diffuse pollution) are an obvious example of the way in which economic prosperity and ecosystem (and wider landscape) restoration can work hand in hand.
Large scale renewable energy development proposals are often problematic in historic landscapes however there are potentially opportunities such as small scale hydro-generation in weirs. Micro-generation is opening up new opportunities to use remote heritage assets or provide visitor facilities. Installations like photovoltaics need to be carefully designed and executed to complement the building and its setting and not be detrimental to biodiversity.

Many energy efficiency improvements can be carried out too ,often at a relatively low cost, to significantly enhancing the comfort of older homes and buildings, as well as providing savings on fuel bills and helping to meet greenhouse gas emission reduction targets. Improvements can also help ensure buildings remains viable, and in turn protected and conserved into the future. A balance needs to be achieved between improving energy efficiency and avoiding damage both to the significance of the building and its fabrics, and also habitats like bat roosts.

Alongside consideration of new technologies there needs to be greater understanding of the importance of traditional materials, technologies and land management approaches for biodiversity. For instance the importance of traditional walling techniques and materials for invertebrate habitat has been anecdotally observed but warrants closer investigation. We also know that traditional building features such as eaves are important for certain species of bird such as swifts, house sparrows and house martin.

4. Processing of Personal Data

This notice sets out how HM Treasury (the data controller) will use your personal data for the purposes of this consultation for the Dasgupta Review on the Economics of Biodiversity, and explains your rights under the General Data Protection Regulation (GDPR) and the Data Protection Act 2018 (DPA).

The data we collect about you (Data Categories)

The personal data that we collect may include the name, address, email address, job title, and employer of the correspondent, as well as their opinions. It is possible that respondents will volunteer additional identifying information about themselves or third parties.

Legal basis of processing

The processing is necessary for the performance of a task carried out in the public interest. The task is requesting evidence or obtaining opinion data in order to develop good effective proposals and recommendations to government.

HM Treasury may use the contact details provided to contact respondents during the consultation period in order to request clarification or further information regarding the response provided where this is deemed necessary.

Special category data

We do not expect that any special category data will be processed.

Purpose

Any personal information will be processed for the purpose of obtaining evidence from members of the public and representatives of organisations and companies about departmental policies, proposals, or generally to obtain public opinion data on an issue of public interest.

Information and data provided to the controller in response to this call for evidence will be used by Professor Partha Dasgupta and the Dasgupta Review Secretariat to support their independent review of the economics of biodiversity.

Whom we share your responses with (Recipients)

Information provided in response to consultations may be published or disclosed in accordance with the access to information regimes, in particular those under the Freedom of Information Act 2000 (FOIA), the Environmental Information Regulations (EIR) 2004, the GDPR and DPA.

Where you consider that the information you provide should not be disclosed under these regimes, you should state that you are providing the information in confidence and explain why you consider the information to be confidential. If the controller receives a request for disclosure of the information, they will take full account of your explanation, but they cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on HM Treasury.

The Dasgupta Review’s work will be independent of government. It will make a final report with its recommendations before the meeting of the Conference of the Parties to the Convention on Biological Diversity in China in October 2020.

Where someone submits special category personal data or personal data about third parties, we will endeavour to delete that data before publication takes place.

Where information about respondents is not published, it may be shared with officials within public bodies involved in this consultation process to assist them in developing the policies to which it relates. Examples of these public bodies appear on gov.uk.

As the personal information is stored on HM Treasury's IT infrastructure, it will be accessible to HM Treasury's IT contractor, NTT. NTT will only process this data for HM Treasury's purposes and pursuant to the contractual obligations they have with HM Treasury.

How long we will hold your data (Retention)

Personal information in responses to consultations will generally be published and therefore retained indefinitely as a historic record under the Public Records Act 1958.

Personal information in responses that is not published will be retained for three calendar years after the consultation has concluded.

Your rights

You have the right to request information about how your personal data are processed and to request a copy of that personal data.

You have the right to request that any inaccuracies in your personal data are rectified without delay.

You have the right to request that your personal data are erased if there is no longer a justification for them to be processed.

You have the right, in certain circumstances (for example, where accuracy is contested), to request that the processing of your personal data is restricted.

You have the right to object to the processing of your personal data where it is processed for direct marketing purposes.

You have the right to data portability, which allows your data to be copied or transferred from one IT environment to another.

How to submit a Data Subject Access Request (DSAR)

To request access to personal data that the controller holds about you, contact:

HM Treasury Data Protection Unit
G11 Orange
1 Horse Guards Road
London
SW1A 2HQ

dsar@hmtreasury.gov.uk

HM Treasury provides a secretariat function to the Dasgupta Review.

Complaints

If you have any concerns about the use of your personal data, please contact HM Treasury via this mailbox: privacy@hmtreasury.gov.uk.

If HM Treasury is unable to address your concerns to your satisfaction, you can make a complaint to the Information Commissioner, the UK's independent regulator for data protection. The Information Commissioner can be contacted at:

Information Commissioner's Office
Wycliffe House
Water Lane
Wilmslow
Cheshire
SK9 5AF
0303 123 1113

casework@ico.org.uk

Any complaint to the Information Commissioner is without prejudice to your right to seek redress through the courts.

Contact details

The controller for any personal data collected as part of this consultation is HM Treasury, whose contact details are:

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The contact details for HM Treasury's Data Protection Officer (DPO) are:

The Data Protection Officer
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