



25th BIC Summit, London, 27th November 2015

**ENVIRONMENT: PROTECTING OUR NATURAL CAPITAL AND RESOURCES:
*CASE STUDY ON POLLINATORS***

The Council is invited to:

Discuss and note the following paper prepared by Environment work sector officials including the following key points:

- A new approach to assessing how the environment contributes to our economy and prosperity has developed over recent years, which is to view the environment as a form of capital (natural capital) alongside other stocks such as human, manufactured and social capital. A natural capital framework shows that the natural environment is a key component in furthering our economic prosperity, social well-being and health. We need to deepen our understanding of the value of our environment if we are to manage it better.

- If economic growth is to be maintained, natural capital has to be managed sustainably. Member Administrations agree to work together to further our knowledge and understanding of natural capital and the benefits it provides. They must be seeking opportunities to share approaches and determine areas of commonality, while noting the important role that technological and nature-based solutions can play in protecting and improving natural capital.

**BIC Environment Work Sector
27 November 2015**

INTRODUCTION: WHAT IS NATURAL CAPITAL?

Our economy and wellbeing depends upon a healthy natural environment, which underpins everything we collectively produce and consume. We rely on it for food, energy, minerals, clean air and clean water as well as countless other inputs into our economy. Thus, our continued prosperity is in a large part dependent upon the continued flow of these benefits. However, these benefits are at risk as a result of the long-term degradation of the environment, particularly those caused by human pressures.

Natural Capital refers to the natural resources and elements of the natural environment which provide valuable services to people (often referred to as ecosystem services) such as clean air, clean water, food, raw materials, recreation and protection from floods. These benefits, and the natural assets that underpin them, contribute significantly to our economy and prosperity.

The environment is also an important determinant of wellbeing in its own right. Green spaces support communities; they provide places to meet and options for recreation. According to evidence from the Central Scotland Green Network, access to green spaces encourages and improves both physical health and mental wellbeing regardless of socio-economic status. In England, it is estimated that if every household in England were provided with more equitable access to good quality green space, then around £2.1bn in health cost savings could be achieved by the National Health Service (NHS) per annum¹.

Improving the environment thus not only improves quality of life but helps to stimulate economic activity.

During the 20th century, humanity's interaction with and impact on the global environment was unprecedented:

- "World population grew by a factor of 4 to more than 6 billion; industrial output increased by a multiple of 40 and the use of energy by 16; methane producing cattle populations grew in pace with the human population; fish catch increased by a multiple of 35; and carbon and sulphur dioxide emissions by a factor of 10". Dasgupta (2007).
- "Nearly two thirds of the services provided by nature to humankind were found to be in decline worldwide. In effect, the benefits reaped from our engineering of the planet have been achieved by running down natural capital assets". Millennium Assessment Board (2005).

These pressures are accelerating in the 21st Century and this is putting future economic growth and prosperity at risk. For example:

- A reduction in the economy's stock of natural capital or a forced relocation of economic activity to mitigate risks from hazards such as flooding can reduce economic growth. Sustainably managed natural capital helps mitigate hazards such as flooding which can damage infrastructure such as buildings and transport

¹ Natural England (2009) Our Natural Health Service: The role of the natural environment in maintaining healthy lives. Sheffield: Natural England.

networks. Mark Carney, the Governor of the Bank of England, recently highlighted the risks to financial stability posed by climate change.

- The overuse of natural capital risks pushing assets over tipping points (such as the collapse of fish stocks from overfishing) leading to a loss of jobs and harm to whole communities. The resulting loss of ecosystem benefits can impact upon growth. Overfishing reduces the long-term sustainable yield of fisheries. For example, if UK fish stocks were restored to their historic twentieth century levels, the value of fish landings could be £1.4bn per year higher².
- Excessive pollution can impact on health and cause large clean-up costs, negatively affecting productivity and the labour force. For example, air quality problems not only cut productivity through increased sickness, but also increase health care costs and lead to premature deaths. Currently it is estimated that poor air quality costs the UK at least £16bn per year.
- We are under threat from the effects of **declining pollinator numbers**. The value of insect pollination to the UK's agricultural output is estimated at £430m per year, €53 million in the Republic of Ireland and €153 billion world-wide. The impact of declining pollinators is set out in the case study in Annex.

THE CHALLENGE AHEAD

Member Administrations face a number of challenges to safeguard our natural capital and invest in it adequately. We are increasingly demanding more from our natural assets while at the same time eroding their capacity to deliver. We need to take a strategic approach to guide government, businesses and civil society in identifying our most valuable natural assets, their quantity, status and condition, and the values of the different services they can produce. This will lead in turn to better management of our natural capital.

There is a clear willingness between Member Administrations to work together to build sustainability into the use of natural resources to enhance our collective prosperity and well-being. Caring for the environment and building a better economy do not have to be in conflict with each other. For example, there are opportunities to invest in renewable energy, green technologies and business ventures within the creative industries (inspired by the natural environment) and the growing green and wildlife tourism industry.

In order to better protect and enhance the environment we need to **measure and understand the value** of our natural capital. For example, Scotland has developed a Natural Capital Asset Index, which measures annual changes in its natural capital based on an evaluation of ecosystem service potential. Across the UK, the Office for National Statistics is incorporating natural capital into its national accounts in a comprehensive programme running to 2020³.

² NCC (2015) State of Natural Capital – third report to Government.

³ See <http://www.ons.gov.uk/ons/guide-method/user-guidance/natural-capital/index.html>

This agenda is not about putting a 'price' on the environment so that it can be sold off. Rather, valuing natural capital is necessary so that it is factored in when deciding policy, for example, where to build infrastructure or whether to invest in pollution-saving technology. The tendency to ignore the value of nature has been a major problem in the past and has too often resulted in our natural environment being deprived of investment, mismanaged, and over-consumed.

As we seek to effectively target limited resources, we need to make sure we are prioritising action to produce the most beneficial outcomes – for people, for the economy and for the environment – and a natural capital approach allows us to do this.

A JOINT SOLUTION

The British Irish Council plays a vital role in facilitating and fostering collaboration among Member Administrations and providing a forum where issues affecting our common interests can be brought to the fore. BIC Member Administrations recognise the need for continued collaboration to attain maximum impact, especially given that **the decline of natural capital and the impacts of this do not stop at our administrative boundaries**. Combining of resources across BIC Administrations also allows for valuable efficiency gains and avoids duplication. An example of such valuable collaboration is the ONS-led national accounting project, for which Scotland is supplying two case studies looking at the Scottish Borders and Aberdeenshire. Through the Council, all Member Administrations can come together and gain valuable insight into trends, best practice and research on the environment.

Member Administrations commit to sharing approaches and resources in the following areas:

- **Environmental Technologies**
- **Accounting and Data**
- **Identifying Natural Capital at Risk**
- **Research**

Environmental Technologies

Technology plays a very significant role in helping to solve many environmental problems. Our air, rivers and beaches are cleaner than they have been for decades due to technological innovation and investments, but there is much more we can still do.

As an example, Geographic Information System (GIS) mapping is a key component of understanding where our most valuable natural assets are located, how they interact and where they are at risk. Member Administrations are committed to investigating the potential of a more aligned approach to mapping assessments. This could lead to improved efficiency, avoiding duplication in some cases and improving mutual understanding.

- Member administrations commit to work together to **share information and best practice** on the most promising technologies that efficiently and effectively help address declines in natural capital.

Accounting and Data

The amount and quality of our natural capital in part determines future prospects for growth and wellbeing, yet it is currently almost entirely omitted from key statistics such as national income. If changes are **properly accounted for in our national accounts**, then this information can feed into policy making to prioritise the protection and improvement of our valuable assets.

The UK, led by the Office for National Statistics set out a roadmap in 2013 to incorporate natural capital into its national accounts by 2020. It is leading the world in doing so, with significant progress to date. This has involved the measurement and valuation of many benefits obtained from natural capital that have previously been ignored or little understood. For example, we now know that the carbon and recreation value of UK woodlands is on average 15 times the asset value of the timber obtained from those woodlands. This is valuable information to inform policy design.

- Member Administrations look to **further discussion and sharing of approaches regarding quantification of natural capital**. The Office for National Statistics, supported by the Department for Environment, Food and Rural Affairs (Defra), has volunteered to **hold a workshop with interested Member Administrations, to share lessons learned from its work to date in incorporating natural capital into the national accounts**. While valuation and accounting of natural capital is not established in many Member Administrations, they agree to share knowledge and information while they explore options on the best approach.
- Member Administrations shall also explore how government data may be **shared with the public** such that everyone can be better informed about how they can contribute to conserving natural capital.

Identifying natural capital at risk

National natural capital accounts are one way of recording how natural assets and the benefits we derive from them are changing over time, but it is also vital to interpret this data to show where the threats to the environment are greatest.

Scotland operates their own assessment of the health of ecosystems which they would be willing to contribute to a BIC-wide effort.

The Natural Capital Committee, an independent advisory body set up to advise the UK Government, has developed a 'risk register' in England that uses available evidence and expert opinion to identify the benefits from natural capital that we should be most concerned about losing. Additional analysis is needed to understand which of those assets or benefits are 'at risk' and should potentially be prioritised for policy and investment purposes.

- Member Administrations agree to consider **holding a workshop, to share lessons on different approaches to assessing assets and benefits at risk.**

Research

Some Member Administrations have undertaken valuable research on natural capital and pollinators and they agree to implement a **more joined-up approach** in order to share scientific data, knowledge and resources.

There are multiple advantages of operating this kind of activity through the British-Irish Council:

- The potential for application of analytical techniques to detect trends in pollinator populations, and subsequent efficiencies;
- The potential to share best practice and reduce research development costs over Member Administrations for natural capital related issues more generally.

Annexed to this paper is a case study: ***Using A Natural Capital Framework To Protect Pollinators***, which is designed to highlight and illustrate the application of the natural capital approach across BIC Members with regards to pollinating insects.

CONCLUSION

Member Administrations agree that natural capital is important for economic growth as well as well-being, including our health. Action is required to protect and enhance our valuable ecosystems.

Member Administrations commit to working together and collaborating in order to further their knowledge and understanding of natural capital and the benefits it provides to the economy and to society.

Member Administrations will work with partners across communities, academia, councils, businesses and civil society to develop a greater understanding of relevant interests, taking forward the concept of natural capital in a coordinated approach across jurisdictions.

BIC Environment Work Sector
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Annex

CASE STUDY:
USING A NATURAL CAPITAL FRAMEWORK TO PROTECT POLLINATORS

Pollinators play a crucial role in enabling many of the foods we take for granted on our tables to be produced efficiently. Without them, not only would we have a much reduced choice of healthy produce to eat, with food production costs being much greater, but our countryside would be a far less beautiful, diverse and resilient place. They are essential for biodiversity and our wider environment.

Pollinators maintain the diversity of wild flowers and support healthy ecosystems, particularly by helping plants to produce fruits and seeds which birds and other animals rely on. They are valued and appreciated by the public, and, as part of our natural world, contribute to our health and well-being. In fact, some 84% of European crops and 80% of wildflowers rely on insect pollination to some extent. The annual value of pollinators for human food crops has been estimated to be at least €53 million in the Republic of Ireland and €153 billion world-wide. Regional estimates of their value to individual crops have also been made, with values of over £7 million per annum for apples in Northern Ireland and €3.9 million per annum for oilseed rape in the Republic of Ireland. The annual value of insect pollination to the UK economy has been estimated at between £400 million and £700 million.

Animal-pollination can also produce better developed soft fruits with longer shelf lives, making them more marketable and therefore increasing their value. The real economic value of pollinators to our economy is likely to be greater than currently estimated. Current evaluations do not take into account the value of pollinators to forage crops (clover), in pest control (for example, the role of hoverflies in protecting winter wheat crops), or their value to private gardeners and communities who grow a wide range of pollinator-dependent fruits and vegetables. Pollinators also provide important social benefits – the buzz of bees is the sound of summer for many people, and helps create a sense of place.

Pollinators play an important role in maintaining healthy farm ecosystems which are a prerequisite for sustainable agricultural production. Maintaining biodiversity in the farm system future-proofs how the land can be used for generations to come.

Although a range of animals visit flowers to collect food (nectar and/or pollen), the most important pollinators across BIC Member Administrations are insects; particularly bees and flies. Only the honeybee produces commercially extractable honey. Solitary bees are often extremely efficient pollinators. Studies in apple orchards have shown that a single mason solitary bee can do the work of hundreds of honeybees. The importance of wild, non-managed bees as pollinators of wild plants as well as crops is becoming more and more apparent.

Over the last 20-30 years, the area of crops that benefit from insect pollination has increased significantly. During the same period, there has been a decline in honey bee colony numbers. Our landscapes now have fewer species of bees and hoverflies than in 1980. Recent research has shown that more than half of the island of Ireland's bee species have undergone substantial declines in their numbers since 1980, with 30% of species considered

threatened with extinction from Ireland according to IUCN criteria. These changes have been driven by habitat loss and land-use practices.

Addressing the challenge

Concrete steps are being taken by member administrations to better understand and assess the impact of these changes on our Pollinators:

UK – measures in England

In 2011, the Department for Environment, Food and Rural Affairs (Defra) commissioned an independent scientific review of the status of pollinators and pollination services. The report concluded that the lack of systematic and standardised monitoring of wild bee and hoverflies means it is not possible to know whether their abundances are changing along with their diversity and distributions.

The National Pollinator Strategy (for England) commits Defra to take action to develop a sustainable approach to long-term monitoring. Research was commissioned under The National Pollinator and Pollination Monitoring Scheme, in order to develop and test robust sampling frameworks, survey protocols, analytical techniques and delivery options which will strengthen monitoring of pollinators and pollination services. This project is being taken forward in collaboration with Scotland and Wales. The project is due to report in January 2016.

This research has brought together a range of key organisations, but implementing strengthened monitoring will require continued coordination of action by a range of individuals and organisation across the volunteer, statutory, research and private sectors. Defra is establishing a working group to identify, coordinate and facilitate actions to strengthen the monitoring of pollinators and pollination services across the UK. On the back of this, **an invitation is extended to all Member Administrations to attend a workshop to explore technology and data exchange opportunities.**

Republic of Ireland and Northern Ireland

The All-Ireland Pollinator Plan, which was released on 17th September 2015 and will run from 2015 – 2020, aims to create an Ireland where pollinators can survive and thrive. It identifies 81 actions to make Ireland pollinator-friendly; to date 68 governmental and non-governmental organisations have agreed their support.

The Plan also sets out specific actions, which include increasing the number of active recorders who can accurately identify pollinator species, and the display of information through an online Atlas of Irish pollinators.

The ongoing goal of the Irish Pollinator Initiative which was set up by the National Biodiversity Data Centre in 2011 is to drive pollinator conservation through better data; this unified approach to monitoring across the island of Ireland will be more efficient than separately managed approaches.

Wales

In July 2013, the Welsh Government launched an Action Plan for Pollinators, the first of its kind in the UK. The Action Plan is coordinated and driven forward by a Task Force of experts from all sectors. It is complemented by a programme of community-level action on the ground being funded through the Welsh Government's Nature Fund, together with action from local authorities and other public bodies in Wales.

Scotland

In 2010 Scotland launched a 10 year Honeybee Health Strategy. A pollinator strategy for Scotland is currently being developed, and a draft will be made available for consultation before the end of 2015.

These and other Action Plans for Pollinators aim to reduce and reverse the decline in pollinators through: providing more diverse flower rich habitats; maintaining healthy, sustainable populations of pollinators; raising understanding and providing information; encouraging positive action by everyone; building an evidence base to inform future actions.

Working together through BIC

BIC Member Administrations agree to **explore technology and data exchange opportunities. A workshop will take place** in the next few months to take this forward.