The Environmental Assessment of Plans and Programmes (Wales) Regulations 2004

Ireland-Wales Co-operation Programme 2014-2020
Strategic Environmental Assessment

Welsh European Funding Office and
the Southern & Mid-Eastern Regional Assembly

Environment Report

ANNEXES

ANNEX 1 - SUMMARY OF RELEVANT LAWS, PLANS, POLICIES AND PROGRAMMES

GLOBAL CONTEXT

Other plan/ Programme	Headlines	Application to Programme
The Convention on Wetlands of International Importance especially as Waterfowl Habitat (1971)	Aims to halt and reverse the worldwide loss of wetlands through wise use and management.	Programme to ensure that projects have no adverse effect on Ramsar sites and aim to enhance them where possible.
Convention on Biological Diversity	Objectives are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. Refers to environmental impact assessment and to the ecosystem approach	Signatories to the Convention agree to take action to meet biodiversity targets. Programme policies support objectives.

COUNCIL OF EUROPE CONTEXT

Aarhus Convention	Grants the public rights and imposes on Parties and public authorities obligations regarding access to information and public participation and access to justice in environmental matters.	Ensuring that the SEA process reflects the aim of the convention: • stakeholders have adequate information in a timely manner • consultation is undertaken at appropriate times and involves all relevant stakeholders.

European Landscape Convention	Recognises the significance, value and role of all European landscapes and seascapes. Asserts that all landscapes matters, and that appropriate measures are put in place to protect and enhance their diverse character and qualities. Promotes a landscape approach to spatial planning and management at a range of scales.	Ensure that decisions recognise the implications for landscapes - avoiding economic and social, as well as environmental impacts and seeking to restore degraded landscapes, their features and connectivity. Ensure that adequate consideration is given to landscape in project level EIA.
European Convention on the Protection of Archaeological Heritage (1992)	Defines archaeological heritage, and sets out measures for its protection. Includes integration of conservation with development; public awareness; collection and dissemination of scientific knowledge; prevention of illicit trading in artefacts	OP to take note of the Convention, including marine context.
EUROPEAN COMMUNITY/UNION CONTEXT		
Air Quality Framework Directive and Daughter Directives	Directive 96/62/EC sets a framework for how member-states must monitor and report ambient levels of air pollutants. Directive 99/30/EC sets ambient air limit values for nitrogen dioxide and oxides of nitrogen, sulphur dioxide, lead and particulate matter. Directive 2000/69/EC sets ambient air limit values for benzene and carbon monoxide. Directive 2002/3/EC sets ambient air limit values for ozone.	Programme policies should support the objectives
Council Directive 75/442/EEC on waste, as amended by Council Directive 2008/98/EC (Waste Framework Directive)	Establishes a framework for the management of waste across the EU. To ensure that waste is recovered or disposed of without risk to the air, water or soil, without creating a nuisance in the form of odours or noise, and without adversely affecting the countryside. Establishes the basis for an integrated waste management strategy	Programme policies to ensure compliance

Directive (2001/42/EC) on the Assessment of the Effects of Certain Plans and Programmes on the Environment (SEA Directive)	Ensures that environmental consequences of certain plans and programmes are identified and assessed during their preparation and before their adoption. Ensures that the environmental implications of decisions are taken into account before the decisions are made. Entails analysis, recording and reporting on the likely effects on the environment, in consultation with the public. Decision making must take into account the comments and the report, and inform the public about that decision. *'to provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view to promoting sustainable development'* (Article 1).	SEA to be carried out alongside proposed OP
Directive 2002/49/EC on Environmental Noise (END)	Defines a common approach with the intention of avoiding, preventing or reducing on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise. Requires member states to draw up noise maps for large agglomerations, busy roads/railways and large airports within their territories and to develop action plans to deal with noise levels in those areas. Provides for the development and use of common noise indicators and requires the public to be fully involved in the implementation of the directive.	Programme to reflect the objectives/requirements of the directive
Directive 2002/96/EC on waste electrical and electronic equipment (WEEE)	Aims to minimise the impacts of electrical and electronic equipment on the environment during their lifetimes and when they become waste. Encourages and sets criteria for the collection, treatment, recycling and recovery of waste electrical and electronic equipment. Defines producer responsibility for financing most waste treatment activities. Enables private householders to return WEEE without charge.	In promoting development of ICT in particular, programme to ensure compliance with the requirements of the directive

Directive 2008/1/EC concerning integrated pollution prevention and control (the IPPC Directive)	Aims: • to minimise pollution from various industrial sources; • to achieve a high level of protection of the environment through measures; • to prevent or, where that is not practicable, to reduce emissions to air, water and land from activities listed in Annex I. Member States must put into place a system requiring operators of certain industrial installations to prevent, or reduce pollution from their operation.	Programme policies to ensure compliance with directive
Directive 97/11/EC of 3 March 1997 amending Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (EIA Directive)	Ensures that environmental consequences of projects are identified and assessed before authorisation is given. Public information and consultation is mandatory, all results are taken into account in project decision making. Defines project categories and themes subject to EIA, content and procedures.	Environmental Report to highlight potential requirements for EIA for specific projects resulting from OP proposals
EC Directive 2000/53/EC on end-of life vehicles (ELV)	Aims to reduce, or prevent, the amount of waste produced from ELVs and increase the recovery and recycling of ELVs. Arrangements for ELVs collection systems free of charge from 1 January 2007 at the latest; Producers (vehicle manufacturers or professional importers) to pay 'all or a significant part' of the costs of recovery of ELVs; Rising targets for re-use, recycling and recovery to be achieved by economic operators by January 2006 and 2015.	Programme to ensure compliance if relevant

EC Directive 79/409/EEC on the conservation of wild birds	Provides a framework for the conservation and management of, and human interactions with, wild birds. Main provisions include: • Maintenance of the favourable conservation status of all wild bird species across their distributional range • Identification and classification of Special Protection Areas for rare • or vulnerable species listed in Annex I of the Directive, as well as for all regularly occurring migratory species • Establishment of a general scheme of protection for all wild birds	The programme leads to projects that have no adverse effect on the integrity of protected areas and protected species, and where possible enhance their conservation status.
EC Directive 92/43/EEC on the Conservation of natural habitats and of wild fauna and flora	Aims to promote the maintenance of biodiversity by requiring Member States to take measures to designate, maintain or restore natural habitats (SACs) and to maintain wild species at a favourable conservation status, introducing robust protection for those habitats and species of European importance. Requires appropriate assessment of programmes/projects likely to have a significant effect on SACs	The programme leads to projects thathave no adverse effect on theintegrity of protected areas, and when possible help to achieve favourableconservation status. Appropriate Assessment of projects likely to impact on European sites
Directive 2000/60/EC Water Framework Directive	Sets out environmental objectives for water status based on: • ecological and chemical parameters; • common monitoring and assessment strategies; • arrangement for river basin administration and planning; and • a programme of measures in order to meet the objectives.	The programme leads to projects that have no adverse effect on the aquatic environment, and where possible help to achieve the objectives for water status. Ensuring general protection of aquatic ecology, specific protection of important habitats, protection of drinking water resources, and protection of bathing water.

EC Freshwater Fish Directive (78/659/EEC)	Seeks to protect those fresh water bodies identified by Member States as waters suitable for sustaining fish populations	The programme leads to projects that have no adverse effect on the integrity of fresh water bodies, and when possible help to achieve the directive's physical and chemical water quality objectives for salmonid waters and cyprinid waters.
EU Directive 2002/91/EC on the Energy Performance of Buildings	Promotes the improvement of energy performance of buildings, taking into account outdoor climatic and local conditions, as well as indoor climate requirements and cost-effectiveness. Measures include: • methodology for calculating the energy performance of buildings; • application of performance standards on new and existing buildings; • certification schemes for all buildings; • regular inspection and assessment of boilers/heating and cooling installations.	Programme policies must support/reflect objectives of the directive
EU's Sustainable Development Strategy (reviewed 2005)	Provides a policy framework to deliver sustainable development. Rests on three interrelated and mutually reinforcing pillars - economic, social and environmental. Focuses on four key-priorities: • limiting climate change and increasing the use of clean energy; • addressing threats to public health; • managing natural resources more responsibly; and • improving the transport system and land use	Programme policies to support/reflect the objectives of the ESDS

European Biodiversity Strategy (EBS)	Developed around four major themes: • conservation and sustainable use of biological diversity • sharing of benefits arising out of the use of genetic resources • research, identification, monitoring and exchange of information • education, training and awareness	Programme policies to support/reflect the objectives of the EBS
Sixth Environment Action Programme (EAP) Review and 7th EAP proposals	6th EAP identified five environmental areas for priority actions • climate change – to stabilise the atmospheric concentrations of greenhouse gases at a level that will not cause unnatural variations of the earth's climate; • nature and biodiversity – to protect and restore the functioning of natural systems and halt the loss of biodiversity; • soils - to protect them from erosion and pollution • environment and health and quality of life – to achieve a quality of the environment where the levels of man-made contaminants, including different types of radiation, do not give rise to significant impacts on or risks to human health • natural resources and waste – to ensure the consumption of renewable and non-renewable resources does not exceed the carrying capacity of the environment. To achieve a de-coupling of resource use from economic growth through significantly improved resource efficiency, dematerialization of the economy, and waste prevention.	Proposals for 7th EAP to be taken into account in development of policies and programmes
EC Treaty 2006	Title XIX refers specifically to the Environment. Article 6 states: *'Environmental protection requirements must be integrated into the definition and implementation of the Community policies and activities referred to in Article 3, in particular with a view to promoting sustainable development.'* Article 174 stresses the need to base environmental protection on the principles of precaution and of preventative action.	The OP and subsequent programmes, plans and projects to ensure environmental protection; precautionary principle to be incorporated into e.g. EIA and decision making.

Lisbon Treaty (2007/C 306/01)	Reinforces its objective to work towards sustainable development (article 2.3), indicating a balanced approach to addressing economic, social and environmental priorities. A new energy title (Title XX) is introduced, *'with regard for the need to preserve and improve the environment.'* Article 176A(c) refers to the need to promote energy efficiency and renewables.	Programme objectives to be in line with the objectives of the Treaty, aiming to promote sustainable development
Proposed Common Programming Regulation CPR - COM(2011) 615 final/2	States (Article 8) that: '*The Member States and the Commission shall ensure that environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster resilience and risk prevention and management are promoted in the preparation and implementation of Partnership Contracts and Programmes.'* Article 87/3(i) states: *'Each operational programme...shall include a description of specific actions to take into account environmental protection requirements, resource efficiency, climate change mitigation and adaptation, disaster resilience and risk prevention and management, in the selection of operations.'*	OP to comply with the Regulation (as finally adopted) in regard to environmental protection and integration.
Directive 2003/35/EC Public participation in relation to plans and programmes	Objective is to contribute to the implementation of the obligations arising under the Aarhus Convention in particular by: • providing for public participation in respect of the drawing up of certain plans and programmes relating to the environment • improving the public participation and providing for provisions on access to justice within Council Directives 85/337/EEC and 96/61/EC	SEA and ex-ante evaluation form part of consultation on proposed OP. Ensure appropriate process for consultation.
Directive 2004/35/EC Environmental liability	Establishes a framework for environmental liability based on the "polluter pays" principle, with a view to preventing and remedying environmental damage. The principle of liability applies to environmental damage and imminent threat of damage resulting from occupational activities, where it is possible to establish a causal link between the damage and the activity in question.	Programme to have regard to the provisions of the directive in ensuring adequate monitoring of environmental effects.

Directive 94/62/EC Packaging and packaging waste	Harmonises differing national measures concerning the manag ement of packaging and packaging waste. The main objectives are to: • prevent impacts on the environment or to reduce impacts from the packaging of waste • ensure the functioning of the internal market and avoid obstacles to trade • to limit distortion and restriction of competition within the Community •	OP to promote directive & ensure compliance with its objectives through, e.g. EMS & guidance
Directive 2006/118/EC Protection of groundwater	This Directive is designed to prevent and combat groundwater pollution and deterioration. Its provisions include: • criteria for assessing the chemical status of groundwater; • criteria for identifying significant and sustained upward trends in groundwater pollution levels, and for defining starting points for reversing these trends; • preventing and limiting indirect discharges (after percolation through soil or subsoil) of pollutants into groundwater	OP to ensure compliance with the objectives of the directive.
Directive 2007/60/EC Assessment and management of flood risk	Requires an assessment of all water courses and coast lines that are at risk from flooding and the mapping of the flood extent and assets and humans at risk in these areas and taking adequate and coordinated measures to reduce this flood risk. It also reinforces the rights of the public to access this information and to have a say in the planning process.	OP to support objectives of the directive where they coincide with its own objectives. Ensure no increased flood risk resulting from its policies.

Directive 86/278/EEC Sewage sludge in agriculture	Seeks to encourage the use of sewage sludge in agriculture and to regulate its use in such a way as to prevent harmful effects on soil, vegetation, animals and man. Its main measures are: • to prohibit the use of untreated sludge on agricultural land unless it is injected or incorporated into the soil • to provide protection against potential health risks from residual pathogens • to prevent grazing animals access to grassland or forage land less than three weeks after the application of sludge • to require that sludge should be used in such a way that account is taken of the nutrient requirements of plants and that the quality of the soil and of the surface and groundwater is not impaired	Not relevant except where there is convergence with EARDF provisions.
Directive 91/676/EEC Nitrates	Aims to protect water quality across Europe by preventing nitrates from agricultural sources polluting ground and surface waters and by promoting the use of good farming practices.	Of relevance to EARDF.
Regulation 1907/2006 Registration, evaluation, authorisation and restriction of chemicals (REACH	The aim of REACH is to improve the protection of human health and the environment through the better and earlier identification of the intrinsic properties of chemical substances. At the same time, REACH aims to enhance innovation and competitiveness of the EU chemicals industry.	OP to ensure compliance with the regulation where relevant.

Directive 2010/31/EU Energy efficiency in buildings Directive 2006/32/EC Energy end use and efficiency	Reducing energy consumption in buildings is a priority under the 20-20-20 objectives on energy efficiency. This Directive contributes to achieving this aim by proposing guiding principles regarding the energy performance of buildings. The purpose of the Directive is to make the end use of energy more economic and efficient by: • establishing indicative targets, incentives and the institutional, financial and legal frameworks needed to eliminate market barriers and imperfections which prevent efficient end use of energy; • creating the conditions for the development and promotion of a market for energy services and for the delivery of energy-saving programmes and other measures aimed at improving end-use energy efficiency	OP to promote energy efficiency in developments. Comply with building regulations if relevant. OP to promote energy efficiency.
Directive 2009/28/EC Renewable energy	Sets targets that the EU will reach a 20% share of energy from renewable sources by 2020 and a 10% share of renewable energy specifically in the transport sector.	OP to promote renewable energy where appropriate.
Directive 2003/87/EC - EU Emissions Trading Directive 2003/ Directive 2004/101/EC of the European Parliament and of the Council of 27 October 2004 (Linking Directive)	This directive establishes a Europe-wide scheme for trading greenhouse gas emission allowances.	OP to take account of the provisions of the Directive.

EU Commission thematic strategy on the sustainable use of natural resources (COM(2005)670)	Establishes guidelines for EU action to 2030, aimed at improving the sustainable use of natural resources whilst addressing the economic and employment objectives of the Lisbon European Council.	OP to support the objectives of the strategy. Promote sustainable use of natural resources.
7th Environmental Action Programme (in development)	Key themes: • Climate change and clean energy • Sustainable transport • Sustainable production and consumption • Conservation and enhancement of natural resources • Public health	OP to take note of emerging EAP in promoting its priorities.
Europe 2020 COM (2011)21	*'...increasing resource efficiency will be key to securing growth and jobs for Europe...It will be key in making progress to deal with climate change and to achieve our target of reducing EU greenhouse gas emissions by 80 to 95% by 2050. It is needed to protect valuable ecological assets, the services they provide and the quality of life for present and future generations. It will help us ensure that the agricultural and fisheries sectors are strong and sustainable.'*	Key guiding document laying down the basis for SF programming. OP to ensure its objectives are in line with those of EU2020.
Draft Common Strategic Framework	Legislative proposals for cohesion policy during the period 2014-2020 were adopted by the European Commission on 6 October 2011. These will be discussed by the Council and European Parliament during 2012-2013. The new Regulations should enter into force in 2014 The CSF is intended to help in setting strategic direction for the next financial planning period from 2014 to 2020 in Member States and their regions. It will enable a far better combining of various funds to maximise the impact of EU investments. National and regional authorities will use this framework as the basis for drafting their 'Partnership Contracts' with the Commission, committing	OP to provide for integration across funding streams to ensure efficient use of SF and other funds. Wales to contribute to Partnership Contract.

	themselves to meeting Europe's growthand jobs targets for 2020.	
EU Thematic Strategy for Soil Protection (2005)	Explains why further action is needed to ensure a high level of soil protection, sets the overall objective of the Strategy and explains what kind of measures must be taken. It establishes a ten-year work program for the European Commission.The proposal for a framework Directive sets out common principles for protecting soils across the EU. Within this common framework, the EU Member States will be in a position to decide how best to protect soil and how use it in a sustainable way on their own territory.	OP to take note of the strategy in approving and funding projects
UK/IRELAND CONTEXT		
Disability Discrimination Act 1995/Disability Act 2005	Aims to end the discrimination of disabled people in the UK and Ireland. Provides rights in the areas of: • employment • education • access to goods, facilities and services • buying or renting land or property Allows the government to set minimum standards for public transport use	Ensure compliance with relevant act
Environment Act 1995	This is a UK Act of Parliament that created a number of new agencies, namely the Environment Agency, The Scottish Environment Protection Agency and the National Park authorities. It also set new standards for environmental management.	Ensure compliance with provisions of the Act where appropriate.
Environmental Protection Agency Act 1992	This Irish Act created the Environmental Protection Agency and established its functions in relation to drinking water, sewage and other effluents, landfill, and environmental reporting.	Ensure compliance with provisions of the Act where appropriate.

Freedom of Information Act 2000/2003	Provides for public access to recorded information held by publicauthorities in England, Northern Ireland and Wales. The 2003 Act provided for similar access in Ireland.	Ensure compliance with Freedom of Information Act 2000. SEA/ex-ante/OP consultation + periodic reviews. Provide information as per FOI Act requirements.
Marine and Coastal Access Act 2009	Provides a framework for management within UK marine waters. Establishes marine conservation zones; fisheries planning and licensing; coastal access.	OP to take note of coastal access provisions, ensure compliance where necessary.
EC (Natural Habitats) Regulations (S.I. 94 of 1997)	Under this Irish legislation, a series of habitats are identified for which Special Areas of Conservation (SACs) must be created and within which these habitats must be maintained at favourable conservation status.	Ensure compliance with the Regulations
The Countryside and Rights of Way Act 2000 (CROW)	Extends the public's ability to enjoy the countryside whilst also providing safeguards for landowners and occupiers. Creates a statutory right of access to open country and registered common land, modernises the rights of way system, gives greater protection to Sites of Special Scientific Interest (SSSIs), enhances management arrangements for Areas of Outstanding Natural Beauty (AONBs), and strengthens wildlife enforcement legislation.	Ensure compliance with the CRoW Act 2000
UK Biodiversity Action Plan, 1994/Ireland 2nd Biodiversity Action Plan 2011	Establishes a programme for the conservation of UK and Irish biodiversity through the production of action plans aiming to achieve recovery of threatened species and habitats.	Wales/Ireland Biodiversity Action plans requirements and objectives should be reflected in SEA framework.
Water Act 2003	Provides regulatory arrangements in the UK for the abstraction and impounding of water resources.	Ensure compliance with Water Act 2003.

European Communities (Drinking Water) (No.2) Regulations 2007 (S.I. 278 of 2007)	Sets out standards in Ireland for suppliers and Water Services Authorities in relation to the duty to supply clean water. Implements the European Communities Directive 98/83/EC on the quality of water intended for human Consumption	Ensure compliance with standards if relevant.
European Communities Environmental Objectives (Surface Waters) Regulations 2009	Transposes into Irish Law the measures to implement Article 4 of the WFD - protection of surface waters	OP to ensure compliance where relevant
Wildlife and Countryside Act1981 (as amended)	The principle UK wildlife protection act. Arrangements for the notification and management of SSSIs and the UK law delivering on the Convention on the Conservation of European Wildlife and Natural Habitats (the 'Bern Convention') and the European Union Directives on the Birds (79/409/EEC) and Habitats (92/43/FFC) Directives.	Ensure compliance with Wildlife and Countryside Act 1981
Wildlife (Amendment) Act 1975-2005	Under this Irish Act, Natural Heritage Areas (NHAs) may be established to protect habitats or species. Whilst some terrestrial and coastal NHAs may encompass adjacent marine areas, no NHAs have been established for marine habitats to date.	Ensure compliance with the Act.
Road Traffic Reduction Act 1997	Requires 29 UK local traffic authorities to produce a report containing an assessment of existing levels of traffic on those roads for which it is the Highway Authority. These reports provide useful monitoring information at key points on the road network.	Ensure compliance with Act where appropriate.

Flood and Water Management Act 2010	ThisUK Act takes forward a number of recommendations from the Pitt Review into the 2007 floods and places new responsibilities on the Environment Agency, local authorities and property developers (among others) to manage the risk of flooding. The Act includes the requirement for an England and Wales flood risk strategy and for local flood risk strategies.	OP to ensure compliance with advice and policy on developments in flood risk areas.
European Communities (Assessment of Flood Risks) Regulations 2010 SI 122/2010	Transposes Directive 2007/60/EC into Irish law. Requires preparation of preliminary flood risk assessment, flood maps and flood risk management plans in cooperation and coordination with neighbouring states in cross-border river basins, also part of compliance with the Water Framework Directive. Also requires publication of assessment and flood maps, public and stakeholder consultation and engagement.	Ensure compliance with the Regulations
Climate Change Act 2008/ Climate Change Bill 2013	Is a long-term legally binding framework to tackle the dangers of climate change. The main aspects of its approach to managing and responding to climate change in the UK are: • setting ambitious, legally binding targets • taking powers to help meet these targets • strengthening the institutional framework • enhancing the UK's ability to adapt to the impact of climate change • establishing clear and regular accountability to the UK Parliament and to the devolved legislatures	OP to promote the objectives of the Act and to comply with its provisions. A key programme theme for which targets have been set at EU, Ireland and Wales levels.

Waste and Emissions Trading Act 2003	The Act is intended to help the UK meet its European obligations under the Landfill Directive and gives statutory footing to penalties in the world's first economy wide emissions trading scheme. Part 1 of the Act provides for an allowance scheme which will help the UK to meet, in the most cost effective and efficient way, its obligations under Articles 5(1) and 5(2) of the Landfill Directive 1999/31/EC. Part 2 places on a statutory footing penalties for direct participants in the UK Greenhouse Gas Emissions Trading Scheme, who fail to comply with their emissions reduction targets and amends the Pollution Prevention and Control (PPC) Act to provide for the application of penalties within future emissions trading schemes.	OP to ensure compliance with the provisions of the Act.
European Communities (Greenhouse Gas Emissions Trading) Regulations 2004	Regulations covering Ireland's role for trading greenhouse gas emissions to comply with the Kyoto Protocol.	OP to comply with the Regulations
Planning and Compulsory Purchase Act 2004	The provisions introduce powers which allow for the reform and speeding up of the UK plans system and an increase in the predictability of planning decisions, the speeding up of the handling of major infrastructure projects and the need for simplified planning zones to be identified in the strategic plan for a region.	Developments under the OP to comply with planning policies. Wales to have its own planning act within the lifetime of the programme.
Planning and Energy Act 2008	This Act provides a legislative basis for local authorities in England and Wales to impose reasonable requirements on new development to provide a proportion of its energy from local renewable and low carbon sources of energy.	OP to comply with the provisions of the Act as necessary.

Planning Act 2008/Planning and Development (Strategic Infrastructure) Act 2006 (No. 27 of 2006)	The 2008 Act creates a new system for approving the construction of major infrastructure projects in the UK, including major roads, airports and power stations .It also introduced the enabling legislation for the Community Infrastructure Levy (CIL), which could be used as a mechanism for funding community heating infrastructure linked to new development. The 2006 Act provides for the making to An Bord Pleanála of applications for planning permission in respect of certain proposed developments of strategic importance to the State.	Comply with the provisions of the relevant Acts where necessary.
UK National Strategic Reference Framework (DTI 2006)	*'The environment in Wales is a driver of economic growth and social well being, as well as being a public good in its own right. The sector is growing in Wales and there are economic opportunities to exploit in the growing environmental goods and services sector as well as environmental protection. Wales's energy consumption is not in decline and the amount of energy not generated from fossil fuels is low. Wales's CO_2 emissions need to be reduced in order to meet the UK's commitments under the Kyoto protocol. Wales also needs to improve its management of waste and water in response to stricter EU legislation in these areas.'*	New UK framework will emerge as part of the new funding arrangements. Wales to contribute.

IRELAND CONTEXT		
Foreshore Acts 1933 to 2011	The primary legislation governing development on the foreshore. Requires that a foreshore lease or licence must be obtained from the Minister for the Marine before undertaking any works or placing structures or material on, (or for the occupation of, or removal of material from), State owned foreshore. Essentially a Foreshore Lease is similar to planning permission. Foreshore licences are granted for other works (e.g. laying of pipes and cables) and purposes (e.g. aquaculture). Foreshore licences are also granted, generally for four years, for initial site investigation for offshore renewable energy. During this time the applicant may carry out an Environmental Impact Assessment (EIA) to determine site suitability. Following site investigation, the applicant may then apply to the Minister for a foreshore lease to develop and operate the project. Leases and licences are granted subject to the payment of fees. The usual duration of a foreshore lease is 35 years.	Coastal proposals will need to comply with the provisions of the Acts.
Aquaculture Acts 1997 to 2006 (Fisheries (Amendment) Act 1997 and amendments)	Comprises: Fisheries (Amendment) Act 1997 No. 23 Sections 1, 2, 3, 4 and 7(1)(2) of the Fisheries and Foreshore (Amendment) Act 1998 (and sections 1 and 7 in so far as they relate to those sections) No. 54 Fisheries (Amendment) Act 2001 No. 40 Sections1(1), 1(3) and 101 of the Sea-Fisheries and Maritime Jurisdiction Act 2006 No.8	Need to ensure that all relevant projects comply with the requirements of the Act
Fisheries Natura Plans & Declarations made under European Union (Birds and Natural Habitats) (Sea-fisheries) Regulations 2013 SI 290	Requires the submission of a plan to the Minister where a sea-fishing activity may have an impact on the conservation objectives of a Natura 2000 site. The plan may be subject to an Appropriate Assessment. The plan may restrict or prohibit fishing activity.	OP to note.

Irish Planning and Development Act, 2000	Requires the production of statutory development and local are spatial plans, and provides the power to make regional planning guidance. Relates to the management of development including obligations. Also provides for the registration of protected structures and conservation areas. Part X relates to Environmental Impact Assessment. The key legislation with reference to spatial development.	Projects may be subject to provisions of this Act. OP to be aware of the need for permissions, EIA and obligations.
National Seafood Operational Programme/ National Strategic Plan for Aquaculture currently under preparation for 2014 – 2020	Consultation document July 2013 provides a SWOT analysis of the Irish seafood sector.	OP to take note where projects relate to seafood operations.
Implementation of pollution reduction programmes for designated shellfish waters (Shellfish Waters Directive 2006/113/EC)	Relevant instruments include: SI No 464 of 2009 European Communities (Quality of Shellfish Waters (Amendment)(No 2) Regulations 2009 (pdf, 489kb) SI No 55 of 2009 European Communities (Quality of Shelfish Waters) (Amendment) Regulations 2009 (pdf, 111kb) SI No 268 of 2006 European Communities (Quality of Shelfish Waters) Regulations 2006 (pdf, 61kb) Require authorities to ensure the quality of waters, and to consult with stakeholders in order to comply with the regulations	OP to take note where appropriate.
European Communities Environmental Objectives (Groundwater) Regulations 2010	Provide measures to restrict or prevent inflow of pollutants into groundwaters, to protect, enhance and restore groundwaters and to ensure sustainable levels of abstraction. Also measures for assessing and monitoring the status of groundwaters.	OP to take note of the regulations where they apply.

WALES CONTEXT		
Planning Policy Wales	Planning policies and proposals should: *Promote resource-efficient and climate change resilient settlement patterns that minimise land-take...and urban sprawl, especially through preference for the re-use of suitable previously developed land and buildings, wherever possible avoiding development on greenfield sites*. *Locate developments so as to minimise the demand for travel, especially by private car*. *Support the need to tackle the causes of climate change by moving towards a low carbon economy.* *Minimise the risks...by building resilience into the natural and built environment.* *...facilitate sustainable building standards (including zero carbon)...* *...securing the provision of infrastructure to form the physical basis for sustainable communities...while ensuring proper assessment of their sustainability impacts* *Contribute to the protection and improvement of the environment, so as to improve the quality of life, and protect local and global ecosystems...The conservation and enhancement of statutorily designated areas and of the countryside and undeveloped coast; the conservation of biodiversity, habitats, and landscapes; the conservation of the best and most versatile agricultural land; and enhancement of the urban environment all need to be promoted.* *Help to ensure the conservation of the historic environment and cultural heritage...* *Maximise the use of renewable resources, including sustainable materials (recycled and*	Provides direction and guidance on planning policy to planning authorities. Developments arising from the OP will be required to comply with planning policy. OP to support PPW provisions where appropriate.

	renewable materials and those with a lower embodied energy)... *Encourage opportunities to reduce waste and all forms of pollution and promote good environmental management and best environmental practice...* *Ensure that all local communities - both urban and rural - have sufficient good quality housing for their needs...* *Promote access to employment, shopping, education, health, community, leisure and sports facilities and open and green space...In general, developments likely to support the achievement of an integrated transport system should be encouraged.* *Foster social inclusion...* *Promote quality, lasting, environmentally-sound and flexible employment opportunities.* *Support initiative and innovation and avoid placing unnecessary burdens on enterprises...so as to enhance the economic success of both urban and rural areas, helping businesses to maximise their competitiveness.* *Respect and encourage diversity in the local economy...promote a greener economy and social enterprises.* *Contribute to the protection and, where possible, the improvement of people's health and well-being as a core component of sustainable development and responding to climate change.*	
Technical Advice Note 5 Nature Conservation and Planning (2009)	*'...integrate nature conservation into all planning decisions looking for development to deliver social, economic and environmental objectives together over time... look for development to provide a net benefit for biodiversity conservation with no significant loss of habitats or populations of species, locally or nationally*	Provides planning guidance on nature conservation. Relevant at project level. OP to support general provisions.

Technical Advice Note 6 Planning for Sustainable Rural Communities (2010)	*'Planning authorities should seek to strengthen rural communities by helping to ensure that existing residents can work and access services locally using low carbon travel and obtain a higher proportion of their energy needs from local renewable sources...The travel plan accompanying the planning application should clearly identify a preference for low or zero carbon modes of transport including walking, cycling and car sharing schemes.'*	Provides planning guidance on rural sustainability. Relevant at project level, and for EARDF. OP to support general provisions.
Technical Advice Note 8 Renewable Energy (2005)	*'...aim of the Welsh Assembly Government is to secure the right mix ofsecure and affordable future energy provision in Wales, whilst minimising associated environmental impacts...'*	Provides planning guidance on renewables. Relevant at project level. Has been subject to review. OP to take note of provisions.
Technical Advice Note 12 Design (2009)	*'An appraisal of an area's natural resources is a prerequisite to providing environmentally sustainabledesign solutions. An appraisal should identify the opportunities offered by a particular site (e.g. decentralised energy) and recognise the site's constraints (e.g. flooding, limitations of public transport links). It should focus on site assets and resources such as the development form, soils and geology, slope/topography, drainage, landscape, solar and wind energy as well as wildlife, biodiversity and natural habitats.'*	Provides planning guidance on green infrastructure and environmental aspects in building design. Relevant at project level. OP to support general provision.
Technical Advice Note 15Development and Flood Risk (2004)	*'Guiding development to locations at little or no risk from river, tidal or coastal flooding or from run-off arising from development in any location... Making provision for future changes in flood risk, for example taking account of climate change, where they can be anticipated... setting out a precautionary framework to guide planning decisions.'*	Provides planning guidance on flood risk management through the planning system. Relevant at project level. OP to support general provision.
Technical Advice Note 18Transport (2007)	*'Integration of land use planning and development of transport infrastructure has a key role to play in addressing the environmental aspects of sustainable*	Provides planning guidance on sustainable transport

	development, in particular climate change and the outcomes identified in the Assembly Government's Environment Strategy.'	infrastructure. Relevant at project level. OP to support.
Technical Advice Note21 Waste (2001)	*'...provision to be made for waste resource management facilities to meet the needs of society for the re-use, recovery and disposal of waste... encourage sensitive waste management, enhance the overall quality of the environment and avoid risks to human health...have regard to the need to protect areas of designated landscape and nature conservation value from inappropriate development... minimise adverse environmental impacts resulting from the handling, processing, transport and disposal of waste... ensure that opportunities for incorporating re-use/recycling facilities in new developments are properly considered.'*	Provides planning guidance on waste management, including provision of facilities. Relevant at project level. OP to support objectives.
Technical Advice Note 22 Sustainable Buildings (2010)	*'...in the future all new buildings achieve a zero carbon standard.'*	Provides planning guidance on energy conservation in building design. Relevant at project level. OP to support objectives.
Waste (Wales) Measure 2010	A Measure to make provision to reduce the amount of waste and litter in Wales and contribute to the development of more effective waste management arrangements in Wales. The measures include: • a power to enable the Welsh Ministers to make regulations requiring retailers to apply the net proceeds of revenues raised from the sale of single use carrier bags to specific environmental purposes or bodies • statutory targets for local authorities for the percentage of municipal waste to be recycled, prepared for re-use and composted • a power for the Welsh Ministers to ban or restrict the disposal of specified kinds of waste to landfill. • a power for the Welsh Ministers to establish Site Waste Management Plans in relation to works involving construction and demolition in Wales	OP to comply with the provisions of the Measure.

One Wales: One Planet (2009)	Vision for a sustainable Wales: • Living within environmental limits • Supporting healthy, biologically diverse and productive ecosystems • Building a resilient and sustainable economy • Enjoying communities which are safe, sustainable and attractive • Being a fair, just and bilingual nation Provides a basis for adopting the 'ecosystem approach	OP to take note and support the provisions of the vision. Provides basis for forthcoming Sustainable Development legislation within the lifetime of the OP.
Wales Spatial Plan (2008)	Aims to deliver sustainable development through six area strategies in the context of the Welsh Assembly Government's statutory Sustainable Development Scheme, and aims to ensure that what is done in the public, private and third sectors is integrated and sustainable, and that actions within an area support each other and jointly move towards a shared vision for Wales and for the different parts of Wales.	Key document for spatial deployment of WG's sustainability agenda. Complementary to the OP proposals. OP to take note of/support the Strategy.
Environment strategy (2006)	Contains five key themes (addressing climate change - sustainable resource use - distinctive biodiversity, landscapes and seascapes - our local environment - environmental hazards) and sets targets for key environmental performance indicators. *'...clear leadership on environmental issues through policies, programmes...environmental considerations are integrated ... consistent environmental evidence...better integration of delivery of environmental protection and enhancement...'*	OP to support the strategy and its targets.
Tourism strategy (2006)	Sets out a comprehensive tourism strategy for Wales including measures to*'...develop and communicate a distinctive brand for Wales...raise the quality of the tourism experience...improve accessibility of Wales as a*	OP to promote general provisions where appropriate.

	destination...encourage higher skills levels...develop effective collaboration...'	
Transport strategy (2008)	Sets out a comprehensive transport strategy on the basis of objectives of *'Reducing greenhouse gas emissions and other environmental impacts; Improving public transport and better integration between modes; Improving links and access between key settlements and sites across Wales and strategically important all-Wales links;Enhancing international connectivity; and Increasing safety and security...improved transport, especially its reliability, is cited consistently by Welsh businesses as one of their top priorities.'*	OP to promote principles of the strategy.
Waste strategy consultation (2009)	Commits WAG to reduce Wales' ecological footprint to 'one Wales: one planet' levels within a generation, and sets out proposals to optimise opportunities for managing waste and increasing efficiency to contribute towards a sustainable future for Wales. Aims to take a 'zero waste' approach, by designing products and services that reduce or reuse waste as far as possible, and developing a local and highly skilled economy for waste management and resource efficiency.	OP to support the aspiration to meet the targets for waste management.
Energy policy statement (2010)	Aims to promote a 'step change'in the energy efficiency performance of all housing stock in Wales, and to ensure that a significant proportion of energy will be generated locally or domestically. The policy seeks to promote the optimal use of offshore wind, geothermal and hydro power generation, as well as biomass, and to test the feasibility of using tidal power.	OP to promote principles of the strategy.
Climate change strategy (2010)	The strategy seeks to create a low carbon economy and to promote business opportunities based on innovative approaches to reducing energy use and reduction of emissions. It aims to promote sustainable transport options such as walking and cycling to reduce congestion and emissions.	OP to promote principles of the strategy.

Coastal flood erosion strategy (2011)	Provides the framework for flood and erosion risk management by: reducing the consequences for individuals, communities, businesses and the environment from flooding and coastal erosion; raising awareness of and engaging people in the response to flood and coastal erosion risk; providing an effective and sustained response to flood and coastal erosion events; and prioritising investmentin the most at risk communities	OP to promote principles of the strategy.
Historic environment strategy (2012)	Establishes a framework for action based on four priorities: building towards a Heritage Bill; implementing Cadw's Tourism Heritage Tourism project; delivering Cadw heritage interpretation and learning programmes;and delivering Cadw's conservation programme for monuments and for new designations	OP to promote principles of the strategy. Heritage legislation will emerge during the lifetime of the OP.
Infrastructure investment plan (2012)	The plan sets out the Welsh Government's strategic investment priorities. Its aim is to improve Wales' transport and telecommunications networks, and to support the development of sustainable energy. It will support investment in housing, and the delivery of more efficient and economical public services, including the education estate, and will promote the development of Enterprise Zones	OP to support and promote principles of the strategy. A key document in guiding the direction for investing in sustainable infrastructure.
Natural Environment Framework (Living Wales) 2010	The purpose of the framework is to ensure that Wales has increasingly resistant and diverse ecosystems that deliver economic, environmental and social benefits. Its main objectives are: • *Integrating the ecosystem approach through government* • *Regulating in ways that do more for the environment and are simpler for people* • *Developing a national approach to managing our natural resources* • *Developing new ways of managing natural resources at a local level* • *Increasing our emphasis on practical evidence gathering* • *Reconnecting people with their environment*	Provides a basis for forthcoming environmental legislation within the lifetime of the OP, based on the ecosystem approach to natural resource management. OP to support the LV objectives.

GDA/SE REGION CONTEXT		
River Basin Management Plans	Establishes an integrated monitoring and management system for all waters within a RBD, to produce dynamic management plans.	OP to be aware of the need to consider project effects on river quality and flow.
DoEHLG Guidelines on the Planning System and Flood Risk Management 2009	Seek to avoid development in flood prone or marginal areas. Must not reduce the flood plain or restrict flow across floodplains.	OP to take note if relevant.
National Heritage Plan (2002)	Sets out a vision for the Irish landscape, allowing for deriving economic benefit to people, whilst acknowledging the need to sustain landscape character by appreciating it contribution to the quality of people's lives.	OP to promote conservation and enhancement of landscape and its sustainable use.
Delivering a Sustainable Energy Future for Ireland – The Energy Policy Framework (2007-2020)	Government energy policy framework 2007-2020, to deliver sustainable energy.	OP to be aware of energy demands of promoted projects
Waste management plans	The Plans adopt a regional approach to integrated waste management and sets targets for municipal waste in the region	OP to take note.
Greater Dublin Strategic Drainage Study	The study examined drainage requirements for all development to year 2002, this year being the study baseline; then examined drainage requirements for all anticipated developments due for completion to year 2011; and finally identified the broad drainage requirements to cater for anticipated and/or assumed development in the Greater Dublin Region to year 2031.	OP to take note.
National Forest Standards	Aims to ensure sustainable forest management	OP to be aware of implications of projects in relation to woodland management/ sustainable forestry

National Climate Change Strategy 2007	stablishes measures to meet 2008-2012 greenhouse gas emissions targets	OP to ensure that projects comply with the strategy
Landscape and landscape assessment guidelines for local authorities	Provides guidance on carrying landscape character assessment.	OP to ensure that promoted projects do not impact on landscape character, and seek wherever possible to reinforce it.
Pollution reduction programmes for Dungarven, Bay, Waterford Harbour, Bannow Bay and Wexford Harbour	To ensure compliance with standards and objectives of the 2006 Quality of Shellfish Regulations.	OP to be aware.
Architectural heritage protection - guidelines to local authorities 2004	The protection of structures, or parts of structures, which are of special architectural, historical, archaeological, artistic, cultural, scientific, social, or technical interest, and; the preservation of the character of architectural conservation areas.	OP to be aware and to promote conservation and sustainable opportunities for access.
Government policy on architecture 2009-2015 - Towards a Sustainable Future Delivering Quality within the Built Environment	Sets out Government Policy on Architecture 2009-2015 contains 45 actions under 6 themes.	OP to ensure that promoted projects are appropriately designed.

Wind energy guidelines 2004	To ensure a consistency of approach in the identification of suitable locations for wind farm development and the treatment of planningapplications for wind farm developments	OP to be aware of the guidelines.
Transport 21 (2005)	Seeks to develop an integrated transport system across Ireland	OP to promote projects that support sustainable transport opportunities.
Smarter Travel - A Sustainable Transport Future 2009-2020	Aims to promote sustainable transport in Ireland	As above.

ANNEX 2 - ANALYSIS OF ACTIONS AND ENVIRONMENTAL OBJECTIVES

			Type of Action 01 - Building Capacity	
SEA Objectives			Bringing together organisations who do not usually work together to stimulate cross-border collaboration and the development of fresh ideas and concepts	Improving the transfer of knowledge between HEIs, research institutes and SMEs
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National Heritage Areas -	**O** *Not likely to be significant - possibility of small local development impacting on some discrete areas?*	**O** *Not likely to be significant*

Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	targets in management plans Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O** *Not likely to be significant, bearing in mind the above comments. Potential to exchange ideas on local environmental quality?*	**O** *Not likely to be significant*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Not likely to be significant, depending on the nature of linkages, concepts & ideas etc.* *Potential for ideas on ecosystem approach?*	**O** *Not likely to be significant*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**✓?** *Should be significant given the concerns expressed over water catchment quality, though depends on the nature of ideas.* *Where there is focus the effects should be short term, i.e. within the life of the programme, and will be long lasting/permanent.* *Positive effects would be widespread, of significance at local levels, but also catchment-wide and across ecosystems.*	**O** *Not likely to be significant*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions			
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**✓?** *As above, should be significant given the concerns expressed over water catchment quality, though depends on the nature of ideas.*	**O** *Not likely to be significant, although this depends on the types of knowledge exchange.*	

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Not likely to be significant.*	**O** *Not likely to be significant*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓?	*Too indefinite/uncertain - potential for positive benefit exists, though this depends on the types of collaboration and projects/ideas developed - this should be an important element of the programme.* *Of national/international relevance, and effects will occur in the medium term and should be permanent.*	✓? *Too indefinite/uncertain - potential for positive benefit depending on the nature of knowledge to be transferred.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**✓?** *Potential appropriate theme, depending on the types of projects generated. The programme provides for development of ideas around waste management in its widest sense.* *Where effects occur, likely to be local and short term.*	**O** *Not likely to be significant*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O?** *Too indefinite/uncertain. Potential for R&D into sustainable forms of travel in line with travel/transport strategies*	**O?** *Too indefinite/uncertain*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓? *Potentially significant - adaptation measures, infrastructure, community resilience are relevant issues in strategies and referred to in the IWOP* *R&D into management of water resources and a focus on soil carbon management.* *Fisheries is a key area of concern.* *Of local to international significance, some effects may be delivered in a short term - likely to be cumulative with development of technology?*	✓? *Should be an opportunity to exchange and develop ideas in this sphere, which has the potential to address climate concerns - likely to be medium to long term for ideas/knowledge to translate into applications?*	

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	✓? *Air quality is an important climate related issue. Improved technology would support this, although other activities may have a less positive impact (see below).* *Improved R&D on the management of ecosystems & their services may have some effects.* *Likely to be long term, local in effect - small incremental changes.*	✓? *Depending on the type of R&D/knowledge exchange, potential for positive effects.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*
Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O?** *Unlikely to be significant, although there is a slight risk that some development might have the potential to impact on marine ecosystems and their biodiversity?* *Effects likely to be localised, but may be cumulative and long term.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 01 - Building Capacity	
			Activities which facilitate the transfer of skills, knowledge, technologies, methods of manufacturing, samples of manufacturing and facilities to ensure that scientific and technological developments are accessible to a wider range of users and in particular to SMEs	Joint cross-border design of innovative solutions which could include piloting, testing or finding ways to overcome barriers to innovation, particularly those faced by SMEs
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National Heritage Areas - targets in	**O?** *Whilst unlikely to be significant, there is a potential for some local effects as a result of technologies/infrastructure/development of incubator firms in sensitive areas?* *Effects likely to be localised, but may be cumulative and potentially permanent in the long term.*	**O** *Unlikely to be significant.*

Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	management plans Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O?** *As above - unlikely to be significant, but there is a potential for some local effects as a result of technologies/ infrastructure/ development of incubator firms in sensitive areas? May put pressure on the planning system.* *Effects likely to be localised, but may be cumulative and potentially permanent in the long term.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**?** *Should be significant given the concerns expressed over water catchment quality, though depends on the nature of ideas.* *Beware of processes that may have a negative effect on quality - need for rigorous EMS capable of being monitored.*	**O** *Not likely to be significant*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O?** *As above. Should be no detrimental effects, though need to consider the processes.*	**O** *Not likely to be significant, although this depends on what is being piloted.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓?	*Potential for positive benefit, though this depends on the types of manufacturing and projects/ideas developed - this should be an important element of the programme.* *Of national/international relevance, and effects will occur in the medium term and should be permanent.*	✓? *Too indefinite/uncertain - potential for positive benefit depending on the nature of knowledge to be transferred.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**✓?** *Potential appropriate theme, depending on the types of projects generated. The programme provides for development of ideas around waste management in its widest sense. Re-using materials in manufacturing processes offers a potential.* *Where effects occur, likely to be local and short term.*	**O** *Not likely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O?** *Too indefinite/uncertain. Potential for R&D into sustainable forms of travel in line with travel/transport strategies* *All such collaborations will require travel - need to ensure sustainable forms/ICT where possible*	**O?** *Too indefinite/uncertain*	

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓? *Potentially significant - adaptation measures, infrastructure, community resilience are relevant issues in strategies and referred to in the IWOP* *R&D into management of water resources and a focus on soil carbon management.* *Fisheries is a key area of concern.* *Of local to international significance, some effects may be delivered in a short term - likely to be cumulative with development of technology?*	✓? *Should be an opportunity to exchange and develop ideas in this sphere, which has the potential to address climate concerns - likely to be medium to long term for ideas/knowledge to translate into applications?*	

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Not likely to be significant. Potential for negative impacts from manufacturing processes?*	**O** *Not likely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*
Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*
Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*

SEA Objectives			Type of Action 01 - Building Capacity Developing both physical and digital cross-border low-cost hubs or networks for innovative businesses and sectors – including networks aimed at core skills and identifying business opportunities; and innovative business networks based on the geographical characteristics of the region, i.e., small towns and rural environments	Pilot actions on developing knowledge exchange and collaboration tools
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National	**O** *Not likely to be significant. But potential for localised impacts from development associated with business hubs in sensitive areas?*	**O** *Not likely to be significant.*

Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Heritage Areas - targets in management plans Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O** *As above, not likely to be significant, but the potential for some localised impacts from development may occur.*	**O** *Not likely to be significant.*	

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions			
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**?**	*Development of hubs may help in terms of efficient use and recycling of water. Will be small, local and short to long term in effect.*	**O** *Not likely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	✓**?** *Potential to harness previously developed land and to recycle buildings for hub development, though retrofitting may be more expensive.*	**O** *Not likely to be significant.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**✓?** *Opportunity to promote efficient energy systems and to reduce overall energy take.*	**O** *Not likely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**✓?** *Significant potential to reduce waste overall, identifying and using innovative methods to recycle materials for hub development?* *Need to incorporate into EMS*	**O** *Not likely to be significant.*	

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O?** *Too indefinite/uncertain. Potential for R&D into sustainable forms of travel in line with travel/transport strategies* *All such collaborations will require travel - need to ensure sustainable forms/ICT where possible*	**O?** *Too indefinite/uncertain. Potential for R&D into sustainable forms of travel in line with travel/transport strategies* *All such collaborations will require travel - need to ensure sustainable forms/ICT where possible*	

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in GHG	✓? *Potentially significant - adaptation measures, infrastructure, community resilience are relevant issues in strategies and referred to in the IWOP* *R&D into management of water resources and a focus on soil carbon management.* *Fisheries is a key area of concern.* *Of local to international significance, some effects may be delivered in a short term - likely to be cumulative with development of technology?*	✓? *Should be an opportunity to exchange and develop ideas in this sphere, which has the potential to address climate concerns - likely to be medium to long term for ideas/knowledge to translate into applications*

	Reduce the risk of flooding Complete flood and coastal risk plans	

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	✓? *Air quality is an important climate related issue. Improved technology would support this, although other activities may have a less positive impact (see below).* *Improved R&D on the management of ecosystems & their services may have some effects.* *Likely to be long term, local in effect - small incremental changes.*	✓? *Depending on the type of R&D/knowledge exchange, potential for positive effects.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*
Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 02 - Translation of research and innovation processes into new and improved commercial products, processes and services	
			Piloting initiatives on a cross-border basis to develop and test and transfer innovative products, prototypes, processes or services with commercial potential	Developing and launching innovative new uses and adaptations for existing technology, processes or services into new markets using cross-border networks
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Heritage Areas - targets in management plans Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O?** *Not likely to be significant, but the development of new processes and technologies may have some impact locally, depending on the type of development. Planning controls may apply in some circumstance.*	**O?** *Not likely to be significant, but the development of new processes and technologies may have some impact locally, depending on the type of development. Planning controls may apply in some circumstance.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Not likely to be significant*	**O** *Not likely to be significant*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**✓?** *Should be significant given the concerns expressed over water catchment quality, though depends on the nature of ideas.* *Where there is focus the effects should be short term, i.e. within the life of the programme, and will be long lasting/permanent. Potential to develop sustainable water management systems and technology.* *Positive effects would be widespread, of significance at local levels, but also catchment-wide and across ecosystems.*	**O** *Not likely to be significant*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions		
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	✓? *As above, should be significant given the concerns expressed over water catchment quality, though depends on the nature of prototypes, processes and services.*	✓? *Should be significant positive given the concerns expressed over water catchment quality, though depends on the nature of technological adaptations*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Not likely to be significant.*	**O** *Not likely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓?	*Potential for positive benefit exists, though this depends on the types of product/prototype developed - this should be an important element of the programme.* *Of national/international relevance, and effects will occur in the medium term and should be permanent.*	✓? *Too indefinite/uncertain - potential for positive benefit depending on the nature of knowledge to be transferred.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**✓?** *Potential appropriate theme, depending on the types of projects generated. The programme provides for development of ideas around waste management in its widest sense.* *Where effects occur, likely to be local and short term.*	**O** *Not likely to be significant*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**?** *Potential for some impact from the transportation of technical equipment, and from exchanges.* *Potential R&D into sustainable forms of travel in line with travel/transport strategies*	**O?** *Too indefinite/uncertain*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓? *Potentially significant - adaptation measures, technological prototypes.* *Fisheries is a key area of concern.* *Of local to international significance, some effects may be delivered in a short term - likely to be cumulative with development of technology?*	✓? *Should be an opportunity to exchange and test ideas for adaptation, which has the potential to address climate concerns - likely to be medium to long term for ideas/knowledge to translate into applications?*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	✓? *Air quality is an important climate related issue. Improved technology would support this, although other activities may have a less positive impact (see below).* *Likely to be long term, local in effect - small incremental changes.*	✓? *Depending on the type of R&D/knowledge exchange, potential for positive effects.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**?** *All technological processes and prototypes linked to coastal and marine environments should give rise to particular consideration of effects.* *These are uncertain, depending on the initiatives that might be piloted.*	**?** *The action refers to innovative new uses and adaptations of technology. Where linked to coastal and marine environments this should be carefully considered in terms of potential effects.* *These are uncertain, depending on the adaptations being considered.*
Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**?** *As above - uncertainties in terms of proposals that might emerge and of the receiving environment*	**?** *As above - uncertainties in terms of proposals that might emerge and of the receiving environment*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**?** *As above.*	**?** *As above.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**?** *As above.*	**?** *As above.*

SEA Objectives			Type of Action 02 - Translation of research and innovation processes into new and improved commercial products, processes and services	
			Marketing of innovation products, processes and services and expansion of available markets assisted by the sharing and development of best practice, expertise and experience on a cross-border basis	Commercialisation, protection and exploitation of research (including applied research to improve market readiness)
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Condition of National Heritage Areas - targets in management plans Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions		
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*	**✓?** *Some potential to develop technologies for exploitation of renewables. Unlikely to be significant by itself.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**✓?** *Some potential to develop technologies for exploitation of waste management and recycling. Unlikely to be significant by itself.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*	

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**O** *Unlikely to be significant, although the promotion and marketing of products would have some benefit where uptake was significant.*	**✓?** *Some potential to develop technologies for exploitation. Unlikely to be significant by itself.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *As above, unlikely to be significant, although the promotion and marketing of products would have some benefit where uptake was significant.*	**✓?** *Some potential to develop technologies for exploitation. Unlikely to be significant by itself.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*
Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 02 - Translation of research and innovation processes into new and improved commercial products, processes and services	
			Support for the development of cross-border smart specialisation clusters with a focus on commercial application of research and innovation	Transferable models to assist internationalisation of SMEs and trade developed using cross-border partnerships
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Heritage Areas - targets in management plans Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *Potential for local impacts linked to the development of clusters with a commercial focus. Potential tension between this objective and reducing the need to travel and transport goods.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions		
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**✓?** *Potential to develop sustainable and efficient management of water resources including SUDS and water recycling.*	**O** *Unlikely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓? *Potential for positive local benefit exists, through ensuring optimal standards for energy requirement, conservation of energy and exploitation of locally sourced renewables.* *Ensure low energy construction materials.*	? *Depends what is being 'internationalised'. Potential for transport costs.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	✓? *Development of hubs should ensure minimum waste and high standards for re-use and recycling.* *Depends on the extent to which 'clusters' relate to built/virtual hubs.*	✓? *Internationalisation of waste management technology may have a positive impact both locally and internationally.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant. Clusters that rely heavily on ICT will reduce the need to travel.*	**?** *There is a potential for a negative effect which may be significant in terms of a particular proposal.* *Depends what is meant by 'internationalisation'.* *Ensure the use of public networks where possible.*	

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓**?** *There may be a small local benefit resulting from the clustering of research space, using energy and water more efficiently and reducing emissions, as well as minimising heat loss.* *Likely to be minor.*	**?** *There is a potential for a negative effect which may be significant in terms of a particular proposal.* *Depends what is meant by 'internationalisation'.* *Ensure the use of public networks where possible.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*
Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*
Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 03 - Delivering societal benefits through innovation Designing and demonstrating products, services and processes which address issues faced by populations which are isolated, excluded or at risk of exclusion including corporate social responsibility initiatives	Developing and delivering cross-border services or financial tools that address the demographic or social challenges highlighted in the Programme area, in particular unemployment, deprivation, health inequalities, rural peripherality /isolation and social integration
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Condition of National Heritage Areas - targets in management plans Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	✓?	*A key concern in is the quality of water infrastructure, especially in older properties. Potential to address drainage issues.*	✓? *Water infrastructure is a priority issue, especially on the Irish side, especially in older properties. Potential to address drainage issues.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions		
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	✓? *As above*	✓? *As above*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	✓? *There is a possibility of land remediation and re-use of redundant buildings for community purposes and for the delivery of services to peripheral communities* *Possibility that some rural communities may be more vulnerable to radon*	✓? *There is a possibility of land remediation and re-use of redundant buildings for community purposes and for the delivery of services to peripheral communities*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓? *Peripheral communities tend to have many energy requirements, including heating and cooking - fuel poverty is an issue.* *There is a significant opportunity to develop fuel efficiency and alternative energy sources, as well as providing opportunities insulate older properties.*	✓? *Significant opportunity to develop systems to address fuel poverty and community based-solutions to energy generation.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	✓**?** *Waste management/services to rural communities are expensive. Issues of fly tipping may be a concern - opportunity to develop systems of waste management including recycling and re-use of materials*	✓**?** *Depending on the kind of services and financial tools, a potential to deliver waste management services to disadvantaged groups - opportunity to develop employment in this area.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	✓? *Rural and coastal communities are dependent on transport for access to essential services.* *Depending on the nature of CSR, opportunity to provide support to viable community/public transport as an alternative to the car, or to introduce services to peripheral communities.*	✓? *Financial support for the provision of transport facilities, or bringing facilities and services to communities* *Potential for employment in such services..*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓? *Possibility to develop services and products to support resilience to changes in climate.* *Potential for local decision making to provide a basis for propose actions.*	✓? *Opportunities to provide services/financial support to initiatives to reduce energy demands, and to find alternatives.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	✓? *Disadvantaged communities may be more vulnerable to a range of air quality issues including ozone in rural areas, as well as radon.* *Traffic congestion may be an issue in some denser settlements. This action may provide opportunities to address air quality issues* *The effects are likely to be local and would be long term*	✓? *Disadvantaged communities may be more vulnerable to a range of air quality issues including ozone in rural areas, as well as radon.* *Traffic congestion may be an issue in some denser settlements. Providing finance to address air quality issues will be beneficial*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	✓ *Significant positive effect likely from this action. Measures to address social isolation may include support for community facilities, to measures to reduce stresses such as travel, energy and access to services, as well as providing employment opportunities*	✓ *Significant positive effect likely from this action. Measures to address social isolation may include support for community facilities, to measures to reduce stresses such as travel, energy and access to services, as well as providing employment opportunities*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*
Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 03 - Delivering societal benefits through innovation Developing cross-border clusters or networks focussing on social and economic development of communities – particularly coastal and rural communities	Cross-border support and cooperation for social enterprises to engage in innovation – including developing low cost cross-border hubs and clusters; actions to improve communications and connections between social enterprises and organisations active in innovation; and cross-border partnerships between HEIs and research institutes, businesses and the community and sharing and development of best practice and models on a cross-border basis
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status	**?** *Potential for development to impact locally on areas of natural/cultural sensitivity. Depends on the nature of the clusters/networks.*	**O** *Unlikely to be significant.*

		National Inventory of Architectural Heritage Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *As above -potential for local impacts from development of clusters - less likely to be problematic.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		certified woodland (such as FSC) Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**✓?** *Addressing social and economic development may improve water use and its quality. Potential for projects that will innovate in water quality management.*	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions		
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**✓?** *Addressing social and economic development may improve water use and its quality. Potential for projects that will innovate in water quality management.*	**O** *Unlikely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	✓ *Potential to re-use previously developed land for social/economic development purposes. Need to be aware of potential roosting/nesting sites.*	**O** *Unlikely to be significant.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**✓?** *Potential for social/economic development to increase demand for energy - need to ensure that opportunities entail renewable sources/efficiency measures.*	**✓?** *Potential for cross border hubs/enterprises to increase demand for energy - need to ensure that opportunities entail renewable sources/efficiency measures.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**✓?** *Possibility to develop waste management systems, especially based on community biodegradables/composting.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**✓?** *Potential to develop community based car sharing/transport networks. Development of local cycle networks.* *Locally significant and short to long term*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓? *Opportunity to develop projects aimed at generating energy from renewables, developing climate adaptation measures, soil and water management initiatives.* *However, social and economic development may also add to the energy requirement.*	✓? *Opportunity to develop projects aimed at generating energy from renewables, developing climate adaptation measures, soil and water management initiatives.* *Increased travel?*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	✓ *Significant opportunity to develop community confidence and resilience, by providing social networks, volunteering and work opportunities and opportunities to promote healthy lifestyles*	✓ *Significant opportunity to develop community confidence and resilience, by providing social networks, volunteering and work opportunities and opportunities to promote healthy lifestyles*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*
Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 04 - Eco-innovation Piloting initiatives to develop and test innovative products, prototypes, processes or services in adaptation and the renewable energy sector – especially marine energy production – including cross-border research into adaptation solutions, renewable energy sources and pilot projects to demonstrate practical application and transferability to business and wider communities	Applied collaborative research and innovation on climate change adaptation, including new concepts, approaches, products, processes, services and technologies with cross-border participation by HEIs, research institutes, business, the public sector and third sector – particularly focussed on the maritime environment
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status	**O** *Unlikely to be significant.* .	**O** *Unlikely to be significant.*

		National Inventory of Architectural Heritage Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *Concerns around impacts of development, especially in relation to the coastal and marine environment. EIA may be required for certain projects.*	**?** *Concerns around impacts of development, especially in relation to the coastal and marine environment. EIA may be required for certain projects.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently	**?** *As above. Potential issues for hydro development? May require EIA/AA and will need to avoid sensitive sites*	**?** *See concerns below - potential issues with marine biodiversity*

		certified woodland (such as FSC) Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**?** *Water quality issue may not be significant, but need to ensure that technology/ engineering schemes do not entail potential damaging materials, chemicals etc*	**?** *Need to ensure that technology/ engineering schemes do not entail potential damaging materials, chemicals etc.* *Research into optimising capacity of the marine environment to address climate issues may have benefits for upstream water quality management.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions		
Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓✓ *Significant potential to develop and promote adaptation measures will deliver positive outcomes for sustainable energy. Significant opportunity to develop renewables and meet regional renewables targets. There may need to be EIA/AA at some sites.*	✓✓ *Significant potential to develop and promote adaptation measures will deliver positive outcomes for sustainable energy. There may need to be EIA/AA at some sites.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled (‘000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*		**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓✓ *Significant potential to develop and promote adaptation measures will deliver positive outcomes for sustainable energy. Significant opportunity to develop renewables and to meet renewables targets. See marine issues below.*	✓✓ *Research into the climate change adaptation will promote new approaches. Significant potential to develop and promote adaptation measures will deliver positive outcomes for sustainable energy. Significant opportunity to develop renewables. See marine issues below.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	✓ *Air quality, in terms of emissions, is linked to climate change concerns - research into adaptation may have significant benefits in terms of improvements to local air quality.* *Methane, CO_2, ozone are all climate factors.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**?** *Some concerns that technology and structures may need to be anchored or embedded.* *Need to ensure that technology/ engineering schemes do not entail potential impacts on the seabed.* *May require further EIA/AA, needs very careful consideration of effects. Avoidance will be necessary in some zones.*	**?** *Need to ensure that technology/ engineering schemes do not entail potential impacts on the seabed.* *Research into optimising capacity of the marine environment to address climate issues should have benefits for marine ecosystem management.* *Research into ecosystem approach to adaptation should enhance marine environment.*
Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**?** *As above - concerns about ensuring the integrity of different marine zones to ensure ecosystem stability. EIA required?* *Disruption to wave/tidal patterns?*	**?** *As above - adaptation measures should seek to protect and enhance benthic, demersal and other marine zones rather than impact on them.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**?** *As above - may need further project level EIA/AA*	**?** *As above.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**?** *Concerns that technology and structures may need to be anchored or embedded, sensitive benthic other zones need to be avoided. Avoid potentially toxic materials/ chemicals.* *Need to ensure that technology/ engineering schemes do not entail potential impacts on marine biodiversity. Concerns include threat of physical impact, disruption to flight and other migration patterns, noise and light.* *May require further EIA/AA, needs very careful consideration of effects. Avoidance will be necessary in some zones.*	**?** *Research into adaptation may include habitat enhancement, but as envisaged there are concerns that technology/engineering may have negative impacts.*

SEA Objectives			Type of Action 04 - Eco-innovation	
			Cross-border demonstration and testing of new products, services, processes and systems relating to climate change adaptation in businesses, communities and the natural environment	Creation of cross-border eco-innovation clusters or networks around the Irish Sea – creating a platform for HEI , third sector, businesses and public sector agencies to collaborate and co-ordinate their activities on a cross-border basis to meet the needs of the Programme area – for example a portal based on the Irish Sea
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage	**?** *'...new products, services, processes and systems relating to climate change adaptation in businesses, communities and the natural environment...' is very broad. May imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes.* *EIA leading to avoidance may be necessary.*	**O** *Unlikely to be significant.*

		Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *As above. May imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes.* *EIA leading to avoidance may be necessary.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**✓?** *Depends on interpretation of '...new products, services, processes and systems relating to climate change adaptation in businesses, communities and the natural environment...'* *There may be opportunities to carry out research into ecosystem services and climate change adaptation, which may be positive, or other measures that may entail development, which may be negative.* *EIA leading to avoidance may be necessary.*	**O** *Unlikely to be significant*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**?** *As above, depends on interpretation, and the projects that are proposed.* *Unlikely to impact significantly on quality as such.*	**O** *Unlikely to be significant*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**?** *As above, depends on interpretation, and the projects that are proposed.* *Unlikely to impact significantly on quality as such.*	**O** *Unlikely to be significant*	
Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓ *Significant potential to develop and promote adaptation measures will deliver positive outcomes to communities and businesses.* *Significant opportunity to develop renewables and to meet renewables targets.*	**O** *Unlikely to be significant*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓✓ *Significant potential to develop and promote adaptation measures will deliver positive outcomes in terms of energy efficiency, conservation and renewables.* *Significant opportunity to develop renewables and to meet renewables targets.*	**O** *Unlikely to be significant*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

SEA Objectives			Type of Action 04 - Eco-innovation Operations which develop the concept of the citizen scientist (i.e. community involvement) working innovatively with HEIs and other research organisations	
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National Heritage Areas -	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

		targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*
Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*
Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

SEA Objectives			Type of Action 05 - Developing and Implementing Adaptation Solutions Joint actions to understand the threats and opportunities from climate change on the environment, infrastructure, health, business, tourism and communities of the Programme area and spatial differences in these impacts	Developing capabilities across the Programme area to identify, quantify and assess existing vulnerabilities and future risks from climate change e.g. impacts/ scenarios (positive/ negative) on economic development (and particularly on businesses), social inclusion and natural resources – exchanging best practice and producing cross-border models
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		National Inventory of Architectural Heritage Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**✓?** *Research itself may not have significant outcomes, but its implications might. These include change to land management, coastal development or new development away from potentially threatened coastlines and increased infrastructure development.* *These may be long term and will have a regional, if not national, significance.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently	**✓?** *As above - the outputs of research may have significant implications that may be positive or negative - this might include new development leading to habitat loss, new and uses that may diminish ecosystems through loss of certain species, fragmentation etc.* *Or it may result in enhancements to coastal environments through using natural systems to protect them.*	**O** *Unlikely to be significant.*

		certified woodland (such as FSC) Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**✓?** *The outputs of research into CC adaptation may have significant implications that may be positive or negative.* *Adopting the ecosystem approach as part of climate resilience should have a positive effect.*	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**✓?** *The outputs of research into CC adaptation may have significant implications that may be positive or negative.* *Adopting the ecosystem approach as part of climate resilience should have a positive effect.*	**O** *Unlikely to be significant.*
Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled (‘000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓? *Research into risks and opportunities should provide guidance for development, land conversion and community resilience.* *Important to apply the ecosystem approach when considering proposals.* *These may be long term and will have a regional, if not national, significance.*	✓? *Research into risks and opportunities should provide guidance for development, land conversion and community resilience.* *Important to apply the ecosystem approach when considering proposals.* *These may be long term and will have a regional, if not national, significance.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**✓?** *Research assessing risks and opportunities should result in more resilient communities, including communities that may be peripheral.* *Outcomes may include more local decision making on climate change adaptation, reductions in risks from flooding, improved access to services etc.*	

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**✓?** *Where research incorporates ecosystem function and services into climate change risks and opportunities, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive, although increases in coastal and marine tourism, infrastructure etc may be negative.* *These may be long term and will have a regional, if not national, significance.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**✓?** *As above.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**✓?** *As above.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**✓?** *As above. Improvements in river, estuarine and coastal habitats should result from the research, but there may be other impacts that are less positive.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 05 - Developing and Implementing Adaptation Solutions Activities which increase an understanding of the evidence base on the impacts of climate change on the Irish Sea and supporting activities including the sharing of best practice models	Develop adaptation actions to minimise the threats or maximise the opportunities to sectors, organisations, and communities in the area
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National	**O** *Unlikely to be significant.*	**✓?** *These include change to land management, coastal development or new development away from potentially threatened coastlines and increased infrastructure development, which may have an effect on protected coastlines and sites of historic importance - there may be enhancement of protected landscapes if the land management includes ecosystem approach.* *These may be long term and will have a local to regional/national significance.*

		Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**O** *Unlikely to be significant.*	**✓?** *As above, will include change to land management, coastal development or new development away from potentially threatened coastlines and increased infrastructure development, which may have an effect on protected coastlines and sites of historic importance - there may be enhancement of protected landscapes if the land management includes ecosystem approach.* *These may be long term and will have a regional, if not national, significance.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**O** *Unlikely to be significant.*	✓ *These include changes to land management including woodland and upland/wetland management, coastal realignment.* *May also entail new development away from potentially threatened coastlines and increased infrastructure development, which may have an effect on protected coastlines and sites of historic importance - there may be enhancement of important biodiversity sites as providers of ecosystem services such as carbon sequestration, water and soil management etc. if land management is based on the ecosystem approach.* *These may be long term and will have a regional, if not national, significance.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled (‘000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓✓ *Developing evidence into CC adaptation may have significant positive implications.* *Adopting the ecosystem approach as part of climate resilience should have a positive effect.* *This is likely to be a medium to long term effect, and will contribute to overall targets.*	✓ *Adaptation actions will deliver positive outcomes in terms of energy efficiency, conservation and renewables.* *Significant opportunity to develop renewables and to meet renewables targets.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**✓?** *Depends on interpretation, and the projects that are proposed. Adaptation measures should generally improve local air quality as a result of reductions in emissions and carbon losses from changes in land management.* *Unlikely to impact significantly on quality as such.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 05 - Developing and Implementing Adaptation Solutions Developing evidence based cross-border adaptation strategies, management plans and pilot projects to turn what otherwise might be negatives into opportunities (such as warmer summers) – particularly related to the marine and coastal environment	Delivery of relevant cross-border adaptation measures, particularly for coastal communities and marine environment
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage	**?** *Evidence base is crucial, especially in terms of alternative options for land uses/conversion from traditional to new crops etc.* *Implications might be significant. These include change to coastal development or new development away from potentially threatened coastlines and increased infrastructure development.* *Coastal and marine tourism has the potential for negative impacts on protected coastlines/marine zones.* *These may be long term and will have a regional, if not national, significance.*	**✓?** *'...adaptation measures' may include renewables infrastructure and coastal defences, which imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes.* *Potential threat to marine archaeology from marine based structures?* *EIA leading to avoidance may be necessary.* *Short to permanent effects that will be local to national in impact.*

		Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *Evidence base is crucial, especially in terms of alternative options for land uses/conversion from traditional to new crops etc.* *Implications might be significant. These include change to coastal development or new development away from potentially threatened coastlines and increased infrastructure development.* *Coastal and marine tourism has the potential for negative impacts on protected coastlines/marine zones.* *These may be long term and will have a regional, if not national, significance.*	**✓?** *'...adaptation measures' may include renewables infrastructure and coastal defences, which imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes.* *Potential threat to marine archaeology from marine based structures?* *EIA leading to avoidance may be necessary.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**?** *Evidence base is crucial, especially in terms of alternative options for land uses/conversion from traditional to new crops etc. Potentially significant loss of biodiversity.* *Best practice should include research/ evidence of benefits of ecosystem approach.* *These may be long term and will have a regional, if not national, significance.*	**✓?** *Potential for significant positive effects depending on the measures taken.* *Where hydro-based renewables are proposed there may be implications for aquatic biodiversity. EIA/AA will be necessary and should result in avoidance in sensitive areas.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	✓ *Minimising threats should imply action to retain water and manage it more efficiently, thereby avoiding flood incidents.* *Unlikely to be significant in this context.*	

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓ *Evidence base should provide sgnificant potential to develop and promote adaptation measures will deliver positive outcomes to communities and businesses.* *Significant opportunity to develop renewables and to meet renewables targets.*	**O** *Unlikely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled (‘000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓✓ *Significant potential to develop and promote adaptation measures will deliver positive outcomes in terms of energy efficiency, conservation and renewables.* *Significant opportunity to develop renewables and to meet renewables targets.*	✓ *Actions to minimise threats and optimise opportunities should provide guidance for development, land conversion and community resilience.* *Important to apply the ecosystem approach when considering proposals.* *These may be long term and will have a regional, if not national, significance.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	✓ *Some positive effects anticipated - adaptation should include reductions in emissions and energy demand.* *Reductions in CH_4, CO_2 and NH_3 should result from activities based on evidence - ecosystem approach must apply.* *Effects should be local to national.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**✓?** *As presented, a potentially significant opportunity to provide resilience to sometimes marginalised communities.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**✓?** *There is a small potential that land released from production, and shorelines managed for natural flood protection systems may offer opportunities for public access and enjoyment.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**✓?** *Where research incorporates ecosystem function and services into climate change risks and opportunities, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive.* *These may be long term and will have a regional, if not national, significance.*	**?** *Actions to minimise threats and optimise opportunities may result in positive or in negative effects, depending on the types of actions.* *Where infrastructure is involved there may be some threat of impact - needs consideration and possibly EIA.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	✓? *Where research incorporates ecosystem function and services into climate change risks and opportunities, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive.* *These may be long term and will have a regional, if not national, significance.*	? *Actions to minimise threats and optimise opportunities may result in positive or in negative effects, depending on the types of actions.* *Where infrastructure is involved there may be some threat of impact - needs consideration and possibly EIA.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	✓**?** *Where research incorporates ecosystem function and services into climate change risks and opportunities, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive.* *These may be long term and will have a regional, if not national, significance.*	**?** *Actions to minimise threats and optimise opportunities may result in positive or in negative effects, depending on the types of actions.* *Where infrastructure is involved there may be some threat of impact - needs consideration and possibly EIA.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	. ✓**?** *Where research incorporates ecosystem function and services into climate change risks and opportunities, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive.* *These may be long term and will have a regional, if not national, significance.*	**?** *Actions to minimise threats and optimise opportunities may result in positive or in negative effects, depending on the types of actions.* *Where infrastructure is involved there may be some threat of impact - needs consideration and possibly EIA.*

SEA Objectives			Type of Action 05 - Developing and Implementing Adaptation Solutions Cross-border measures to encourage the use of climate change adaptation strategies and adaptation measures – including action plans to promote uptake and sharing of expertise and best practice models	Transferring knowledge, expertise and best practice on adaptation measures between the two regions of the Programme area
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National	**✓?** *'...encourage the use of climate change adaptation strategies and measures - including action plans...' is very broad. May imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes.* *EIA leading to avoidance may be necessary.*	**O** *Unlikely to be significant.*

		Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	✓**?** *'...encourage the use of climate change adaptation strategies and measures - including action plans...' is very broad. May imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes and seascapes. Potentially positive where the coast is protected via natural flood defence systems.* *EIA leading to avoidance may be necessary.*	**O** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**✓?** *'...encourage the use of climate change adaptation strategies and measures - including action plans...' is very broad. May imply a range of effects e.g. adaptation may imply development, land use changes that result in habitat and species loss.* *EIA/AA leading to avoidance may be necessary under certain proposals.*	**O** *Unlikely to be significant.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓ *Significant potential to develop and promote adaptation measures. Will deliver positive outcomes.* *Significant opportunity to develop renewables and to meet renewables targets.*	**O** *Unlikely to be significant.*	

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	✓ *Potential to reduce energy requirement by re-using materials where appropriate, by bio-composting and using energy sources from waste.* *Such actions will deliver positive outcomes to communities and businesses.* *Significant opportunity to develop renewables and to meet renewables targets. Regional to national potential effect, and medium to long term.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant, bearing mind that collaboration always implies the need to travel to share ideas etc.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓✓ *Is likely to deliver significant effects.* *Climate change adaptation strategies should apply the ecosystem approach.* *Effects may be long term and will have a regional, if not national, significance.*	**O** *Unlikely to be significant.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	✓ *Likely to be some minor positive effects from strategies/actions.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**✓?** *Where research incorporates ecosystem function and services into climate change adaptation strategies, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive, although increases in coastal and marine tourism, infrastructure etc may be negative.* *These may be long term and will have a regional, if not national, significance.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**✓?** *As above.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**✓?** *As above, depends on the strategies adopted.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**✓?** *As above.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 05 - Developing and Implementing Adaptation Solutions Piloting climate change adaptation measures	Sustainable management of the marine environment, ecosystems and biodiversity which are threatened by climate change
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National Heritage Areas - targets in	✓? *'...adaptation measures' may include renewables infrastructure and coastal defences, which imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes.* *Potential threat to marine archaeology from marine based structures?* *EIA leading to avoidance may be necessary.* *Short term to permanent effects that will be local to national in impact.*	✓ *Significant positive effect from this action on protected marine sites, including geology and archaeology.* *Medium term to permanent effects that will be regional to international in impact.*

		management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	✓? *'...adaptation measures' may include renewables infrastructure and coastal defences, which imply a range of effects e.g. retrofitting important buildings, renewables in sensitive landscapes.* *Potential threat to marine archaeology from marine based structures?* *EIA leading to avoidance may be necessary.*	✓ *Significant positive effect from this action on protected marine sites, including geology and archaeology.* *Medium term to permanent effects that will be regional to international in impact.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	✓ *Potential for significant positive effects depending on the measures taken.* *Where hydro-based renewables are proposed there may be implications for aquatic biodiversity. EIA/AA will be necessary and should result in avoidance in sensitive areas*	✓✓ *Significant environmental benefits likely to accrue. Critical to adopt the ecosystem approach that recognises the value of ecosystem services, the functions of ecosystems and the interactions between them. A lack of this approach may fail to optimise potential.* *See marine objectives below.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant.*	✓ *Marine management will need to relate to effective upstream management in order to ensure high quality flows into estuaries and coasts.* *Critical to adopt the ecosystem approach to resources that recognises the value of ecosystem services, the functions of ecosystems and the interactions between them. A lack of this approach may fail to optimise potential.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	✓ *Minimising threats should imply action to retain water and manage it more efficiently, thereby avoiding flood incidents.* *Unlikely to be significant in this context*	✓ *Marine management will need to relate to effective upstream management in order to ensure high quality flows into estuaries and coasts.* *Critical to adopt the ecosystem approach to water management that recognises the value of ecosystem services, the functions of ecosystems and the interactions between them. A lack of this approach may fail to optimise potential.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓ *Significant potential to develop and promote adaptation measures to deliver positive outcomes to communities and businesses.* *Significant opportunity to develop renewables and to meet renewables targets.*	**O** *Unlikely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled (‘000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓✓ *Significant potential to develop and promote adaptation measures that will deliver positive outcomes in terms of energy efficiency, conservation and renewables.* *Significant opportunity to develop renewables and to meet renewables targets.*	✓ *This action refers to management of marine environment in the face if climate change - some adaptation may include changes to aquaculture/ fisheries systems to introduce new spawning grounds, fishing different species.* *May include changes to coastal management.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	✓? *Where adaptation incorporates ecosystem function and services into climate change risks and opportunities, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive.* *These may be long term and will have a regional, if not national, significance.*	✓✓ *Significant environmental benefits likely to accrue. Critical to adopt the ecosystem approach to resources that recognises the value of ecosystem services, the functions of ecosystems and the interactions between them. A lack of this approach may fail to optimise potential.* *Potential for changes in coastal management may be beneficial to marine ecosystems - possible changes to aquaculture and fisheries?*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	✓? *Where adaptation incorporates ecosystem function and services into climate change risks and opportunities, it should result in positive outcomes for the marine environment. Changes in land and coastal management could prove positive.* *These may be long term and will have a regional, if not national, significance.*	✓✓ *As above.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	✓**?** *As above*	✓✓ *As above.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	✓? *As above.*	✓? *As above. Changes to aquaculture/fisheries may have implications for marine biodiversity.*

SEA Objectives			Type of Action 05 - Developing and Implementing Adaptation Solutions Stimulating awareness amongst the communities of the Programme area to influence behavioural change, knowledge awareness and best practice with regard to climate change adaptation	Developing the knowledge base on adaptation to climate change, monitoring, surveying or mapping to reduce uncertainty to eco-systems, biodiversity and aquaculture particularly focused on the Irish Sea
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

		Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *Unlikely to be significant, but may stimulate activities that promote support for development and practices that may result in visual impacts to amenity.*	✓**?** *Unlikely to be significant.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	✓? *Stimulating awareness may have significant implications that may be positive or negative - this might include new development leading to habitat loss, new and uses that may diminish ecosystems through loss of certain species, fragmentation etc.* *Or it may result in enhancements to coastal environments through using natural systems to protect them.* *Awareness of the ecosystem approach will stimulate protection of ecosystems and biodiversity.*	✓? *Knowledge base is crucial, especially in terms of alternative options for land uses/conversion from traditional to new crops etc. Potentially significant loss of biodiversity.* *Best practice should include research/ evidence of benefits of ecosystem approach.* *These may be long term and will have a regional, if not national, significance.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant in itself.*	✓✓ *Developing the knowledge base is crucial. Monitoring, surveying and mapping water flows will be central to this action, especially in terms of pollution management. Aquaculture depends on good quality water.* *These may be long term and will have a regional, if not national, significance.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	✓✓ *As above, developing the knowledge base is crucial. Monitoring, surveying and mapping water flows will be central to this action, especially in terms of pollution management. Aquaculture depends on a reliable supply of good quality water.* *These may be long term and will have a regional, if not national, significance.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*	**✓?** *Knowledge base should provide significant potential to develop and promote adaptation measures.* *Monitoring and mapping optimal opportunities to deliver on energy requirements and alternatives.* *Significant opportunity to develop renewables and to meet renewables targets.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**O** *Unlikely to be significant.*	✓ *Knowledge base should provide significant potential to develop and promote adaptation measures.* *Monitoring and mapping optimal opportunities to deliver on energy requirements and alternatives.* *Significant opportunity to develop renewables and to meet renewables targets.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	✓ *Monitoring and mapping sources of air quality could form part of the action. Opportunity to identify and address air quality concerns.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	✓✓ *Potential for highly significant positive outcome. Mapping marine ecosystems is a critical requirement for understanding their role in delivering ecosystem services.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	✓✓ *As above. Potential for highly significant positive outcome. Mapping marine ecosystems is a critical requirement for understanding their role in delivering ecosystem services.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	✓✓ *As above.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	✓✓ *Potential for highly significant positive outcome. Mapping marine ecosystems is a critical requirement for understanding biological interactions between marine life and its habitat, and in order to optimise its conservation status.*

			Type of Action 06 - Enhancing sustainable economic growth Cross-border promotion of business opportunities which take full advantage of the sustainable management of natural resources, such as niche tourist attractions, including coastal and cultural attractions and maritime heritage sites – including cross-border marketing approaches; and the implementation of cross-border events and communication measures to increase interest	Cross-border maritime tourism development – such as support for tourism at sea including developing and testing best practice models
SEA Objectives				
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets	**?** *This action raises concerns. '... take full advantage of the sustainable management of natural resources, such as niche tourist attractions, including coastal and cultural attractions and maritime heritage sites...' may result in significant negative impacts, given the lack of understanding about thresholds and synergies.* *Any proposals will require careful consideration, and will almost certainly entail some EIA in order to avoid/mitigate sensitive sites.*	**?** *This action raises concerns. '... cross-border marine tourism...' need to be managed carefully in order to avoid impacts on sensitive marine sites and on important seascapes.* *Any proposals will require careful consideration, and will almost certainly entail some EIA in order to avoid/mitigate sensitive sites.*

		Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *This action raises concerns. '... take full advantage of the sustainable management of natural resources, such as niche tourist attractions, including coastal and cultural attractions and maritime heritage sites...' may result in significant negative impacts, given the lack of understanding about thresholds and synergies.* *Any proposals will require careful consideration, and will almost certainly entail some EIA in order to avoid/mitigate sensitive sites.*	**?** *This action raises concerns. '... cross-border marine tourism...' need to be managed carefully in order to avoid impacts on sensitive marine sites and on important seascapes.* *Any proposals will require careful consideration, and will almost certainly entail some EIA in order to avoid/mitigate sensitive sites.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds	**?** *This action raises concerns. '... take full advantage of the sustainable management of natural resources, such as niche tourist attractions, including coastal and cultural attractions and maritime heritage sites...' may result in significant negative impacts, given the lack of understanding about thresholds and synergies, especially in relation to sensitive coastal habitats.* *Demands for water, and its discharge, may impact on biodiversity.* *Any proposals will require careful consideration, and will almost certainly entail EIA/AA in order to avoid/mitigate sensitive sites.*	**?** *This action raises concerns. '... cross-border marine tourism...' need to be managed carefully in order to avoid impacts on sensitive marine sites and on important seascapes. Particular concerns includes coastal development that may impact on sensitive habitats.* *Any proposals will require careful consideration, and will almost certainly entail some EIA in order to avoid/mitigate sensitive sites.*

		Percentage area of independently certified woodland (such as FSC) Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**?** *Unless managed sensitively, coastal tourism development may make demands on already stressed water outflows.* *Potential for large scale impacts over a considerable, perhaps permanent period.*	**?** *Marine tourism will need to operate to high standards in order to avoid marine pollution from e.g. discharges of waste.* *Effects likely to be local to regional, but may be significantly more.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**?** *Unless managed sensitively, coastal tourism development may make demands on water, which in some places may be operating at its optimal.* *There may an effect on aquatic biodiversity.*	**O** *Unlikely to be significant.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**?** *'... take full advantage of the sustainable management of natural resources, such as niche tourist attractions, including coastal and cultural attractions and maritime heritage sites...' would seem to be incompatible with minimising energy requirements - its purpose is to optimise (maximise?) tourism opportunity, which will result in more travel, more development, more energy demand?* *Needs careful consideration. EIA*	**?** *Depends on the scale of marine tourism. Unlikely to result in significant impacts in energy terms overall, though there will be some increase in travel.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**?** *Potential to generate more waste with increases in tourism numbers. May disproportionately impact on some coastal areas.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**?** *'... take full advantage of the sustainable management of natural resources, such as niche tourist attractions, including coastal and cultural attractions and maritime heritage sites...' incompatible with reducing travel. Potential to promote coastal cycling and walking, improving public transport links.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**?** *Energy demands, increases in travel are unlikely to promote this objective. Development is likely to require more energy requirement for building.*	**?** *Increases in marine tourism may not have significant impacts depending on scale and type of tourism, but there will be an increase in energy demand.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**?** *Potential for congestion as a result of tourism development may lead to local problems with air quality.*	**?** *Potential for local effects from marine traffic, depending on scale, type and location.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**✓?** *Tourism development may support peripheral communities in rural/coastal areas, and may help ameliorate isolation and unemployment problems.* *On the other hand there is a potential from pressures that tourism brings on small isolated communities.*	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	✓ *Taking advantage of coastal and other tourism potential may provide opportunities to enhance coastal access, as well as access to discrete sites.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**?** *There may be undesirable impacts on sensitive coastal and marine sites resulting from increases in waste.*	**?** *Unlikely to be significant, but depends on scale, siting and type of marine tourism envisaged. Could include diving?*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**?** *As above - concerns about pollution derived from increases in coastal tourism.*	**?** *As above.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**?** *As above - concerns about pollution derived from increases in coastal tourism.*	**?** *As above.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**?** *As above. Particular concerns about estuarine and coastal species.*	**?** *As above.*

SEA Objectives			Type of Action 06 - Enhancing sustainable economic growth Development of entrepreneurial activity, SMEs and micro-enterprises active in the natural heritage and sustainable resource management, tourist, creative and cultural heritage sectors (particularly utilising existing strengths in this sector) – including testing and demonstrating different approaches to revive or enhance these industries; and sharing best practice, expertise and experiences on a cross-border basis; and supporting the expansion or commencement of businesses in these areas
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of	**?** *Potential for both positive and negative effects - '...the natural heritage and sustainable resource management, tourist, creative and cultural heritage sectors...' can include anything from ecosystem management, which may enhance special areas and sites, to tourism that may encourage congestion, erosion and energy demand.* *Commodification of sites?* *The effects can therefore be both positive and negative, and may be local or regional in scale.*

		Architectural Heritage Condition of National Heritage Areas - targets in management plans	
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *As above - ambivalent. Potential for both positive and negative effects - '...the natural heritage and sustainable resource management, tourist, creative and cultural heritage sectors...' can include anything from ecosystem management, which may enhance landscapes, town and seascapes, to tourism that may encourage congestion, erosion and energy demand, as well as inappropriate signage etc.* *The effects can therefore be both positive and negative, and may be local or regional in scale.* *Requirement for EIA/AA in certain cases?*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**?** *As above, potential for both positive and negative effects - '...the natural heritage and sustainable resource management, tourist, creative and cultural heritage sectors...' can include anything from ecosystem management, which may enhance special areas and sites, to tourism that may encourage congestion and erosion.* *The effects can therefore be both positive and negative, and may be local or regional in scale.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**O** *Unlikely to be significant.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**?** *Ambivalent. Potential for both positive and negative effects - '...the natural heritage and sustainable resource management, tourist, creative and cultural heritage sectors...' can include anything from ecosystem management, which may provide for alternative and sustainable energy sources, to tourism that may increase energy demand.* *The effects can therefore be both positive and negative, and may be local or regional in scale.* *Requirement for EIA/AA in certain cases?*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓? *Potential for both positive and negative effects - '...the natural heritage and sustainable resource management, tourist, creative and cultural heritage sectors...' can include anything from ecosystem management, which may provide for alternative and sustainable energy sources, to tourism that may increase energy demand.* *The effects can therefore be both positive and negative, and may be local or regional in scale.* *Requirement for EIA/AA in certain cases?*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	**O** *Unlikely to be significant.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	✓	*Potential for positive effects - '...the natural heritage and sustainable resource management, tourist, creative and cultural heritage sectors...' appears to offer opportunities for tourism linked to access.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 06 - Enhancing sustainable economic growth Cross-border promotion of the socio-economic value of traditional maritime and in-land industries and fisheries – including testing, demonstrating, and sharing different approaches to revive or enhance these industries	Supporting the development, production and commercialisation of products, processes and services based on unique cultural and local characteristics
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage	✓ *Opportunity to reinforce traditional land and marine resources may have the effect of reinforcing the character of special landscapes.*	✓? *Likely to be positive, but commercialisation carries the threat of pastiche which may undermine authentic character.*

		Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	✓ *Traditional land and marine resource management has been associated with landscape character, and should have the effect of reinforcing the character of landscapes and seascapes.*	✓**?** *Likely to be positive, but commercialisation carries the threat of pastiche which may undermine authentic character.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	✓ *There is arguably a link between traditional approaches to land management and the quality of its biodiversity.* *The same should apply to traditional methods of harvesting marine foods. Likely to be less intrusive than more intensive approaches.*	**O** *Unlikely to be significant.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	✓ *Traditional practices should imply reduced chemical inputs and extensive rather than intensive management, which should have a beneficial effect on the quality of water. Hedging, coppicing, wetland and pond habitats will all have a positive effect.*	**O** *Unlikely to be significant, although increased commercialisation may increase water use and discharge.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	✓ *Traditional practices should imply improved systems of water management including wetland and pond habitats.* *This will have a positive effect especially in upland systems.*	**O** *Unlikely to be significant, although increased commercialisation may increase water demand.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	✓ *Potential to raise the profile of peripheral communities, increase their confidence and promote opportunities for employment.*	✓ *Improved work opportunities will build confidence and, in appropriate areas, reduce the need to travel for work, reducing costs and time.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 06 - Enhancing sustainable economic growth Enhancing the environment – particularly the coastal and marine environment – in order to support green and blue growth	Piloting actions and initiatives which maintain, preserve and promote the natural and cultural heritage in the Programme area
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National Heritage Areas -	✓ *'...Enhancing the environment – particularly the coastal and marine environment – in order to support green and blue growth' - is ambivalent.* *There are likely to be significant positive effects, but some proposals may need to be considered on the emphasis on 'growth' at the cost of enhancement.* *There is a need to consider the ecosystem approach in terms of growth.* *EIA?*	✓✓ *'...actions and initiatives which maintain, preserve and promote the natural and cultural heritage' implies a strong positive effect in protected landscapes and their cultural settings* *This could be regional to national, and long term to permanent in its effect.*

		targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	✓ *As above, a need to strike a balance between environmental enhancement and green/blue growth.*	✓✓ *As above this action implies a strong positive effect in town, sea and landscapes and their cultural settings* *This could be regional to national, and long term to permanent in its effect.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	✓ *The effect should be positive, bearing in mind the need to strike a balance between environmental enhancement and green/blue growth.* *Incorporate the ecosystem approach to enhancement and growth.*	✓✓ *A strong opportunity to enhance regional and national biodiversity over the long term.* *Promotion of biodiversity is an important aspect in encouraging public support for conservation.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	✓ *Environmental enhancement should include hedgerow and woodland management, wetland restoration and grassland conservation in the uplands, and the enhancement of coastal waters through management of drainage systems.* *Environmental enhancement also implies enhancement of the built environment. In all cases it is anticipated that the effect on water quality will be positive.*	✓✓ *A significant opportunity to enhance the quality of water.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	✓ *Environmental enhancement should include hedgerow and woodland management, wetland restoration and grassland conservation in the uplands, and the enhancement of coastal waters through management of drainage systems.* *Environmental enhancement also implies enhancement of the built environment. In all cases it is anticipated that the effect on water management including flood risk amelioration will be positive.*	✓✓ *A significant opportunity to enhance the quality of water. This needs an clear recognition of ecosystem function and the interrelationships between habitats and their effect on water flow.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	✓ *Enhancement of the built environment should include seeking opportunities for re-use of redundant sites and buildings.* *Positive effects are likely, especially where sites can be used to provide for green and blue growth.*	✓ *Conserving and promoting the built environment should include seeking opportunities for re-use of redundant sites and buildings.* *Likely positive outcome at local/regional levels.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	✓ *Potential to optimise renewables as part of environmental enhancement programmes.* *Include energy conservation measures. Potential increases in demand resulting from growth?*	**O** *Unlikely to be significant*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	✓ *Enhancement of the built environment should ensure that materials are recycled and that sustainable waste systems are in place.*	**O** *Unlikely to be significant*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant*	**O** *Unlikely to be significant*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	✓ *Potential to optimise renewables as part of environmental enhancement programmes. In rural context, a significant opportunity to manage ecosystems to capture carbon and to ameliorate climate related risk.* *Potential increases in energy demand resulting from growth? Opportunity to provide renewable resources in the form of biomass?*	✓ *The ecosystem approach to land management is at the core of such activities. A significant opportunity to manage ecosystems to capture carbon and to ameliorate climate related risk.* *Opportunity to provide renewable resources in the form of biomass?*	

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	✓ *Likelihood of some positive outcomes in terms of air quality, resulting from higher standards of energy use?* *Unlikely to be significant.*	✓ *Likelihood of some positive outcomes in terms of air quality, resulting from higher standards of land use management including less intensive stock management systems.* *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	✓ *Potential to raise the profile of peripheral communities, increase their confidence and promote opportunities for employment.*	✓ *Potential to raise the profile of peripheral communities, increase their confidence and promote opportunities for employment.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	✓ *Environmental enhancement of land, together with opportunities for green growth, are likely to result in increased opportunities for access to land.*	✓ *Maintaining and promoting natural and cultural heritage are likely to result in increased opportunities for access to land.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	✓? *'...Enhancing the environment – particularly the coastal and marine environment – in order to support green and blue growth' - is ambivalent.* *There are likely to be significant positive effects, but some proposals may need to be considered on the emphasis on 'growth' at the cost of enhancement.* *Management of rural and coastal environments, especially the management of water, will have a positive effect.* *Blue growth may be a problematic concept - depends on the type of growth.*	✓✓ *Management of terrestrial and marine ecosystems will result in significant positive effects.* *Management of water in particular will have a positive effect.* *Widespread impact over a long period is likely.* *Protection of economically valuable marine and river species, including shellfish, is important.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	✓**?** *As above.*	✓✓ *As above.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	✓? *As above.*	✓✓ *As above.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	✓**?** *As above.*	✓✓ *As above.*

SEA Objectives			**Type of Action 07 - Developing and Promoting Socially Inclusive Sustainable Development** Community regeneration through sustainable development and job creation based on cultural and natural heritage – particularly focused on coastal and rural communities and where common problems are faced or opportunities are available on both sides of the Irish Sea – including promotion and development of cultural heritage initiatives with emphasis on supporting economic development	Using traditional, cultural and creative strengths to improve an area and make it a more attractive place to live, relocate, work and visit – including the sharing of expertise and developing projects based on joint strengths
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs -	✓ *Opportunities to enhance protected landscapes and sites provided job creation is based on their character and qualities.* *Potential threat where job creation is in tension with the need to manage development in sensitive areas.*	✓ *Likely positive outcome where skills are developed that reflect the character and special qualities of areas - woodland. hedgerow and habitat management, restoration using traditional skills will have significant positive outcomes.* *Likely to be localised.* *Beware of the term 'attractive'.*

		condition status National Inventory of Architectural Heritage Condition of National Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	✓ *As above. Need to consider potential effect of job creation on character, especially where successful enterprise results in demand for development.*	✓ *As above.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently	✓ *Potential to develop skills in habitat/ landscape enhancement.*	✓ *Traditional skills in landscape management are likely to result in enhancement of biodiversity. Creative skills are often deployed to reflect the special character of places including their biodiversity.*

		certified woodland (such as FSC) Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	✓ *Potential to develop skills in land management including wetland habitats, hedgerows etc, will promote the improvement of water quality.*	✓ *Likely positive outcome - enhancement of places should include improvements to water bodies - beware of the term 'attractive', which may mean different things to different people.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	✓ *As above.*	✓ *As above.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	✓ *This action presents a significant opportunity to restore disused buildings to a high standard, and to provide alternative uses to redundant land in order to enhance its biodiversity potential, as well as providing green spaces for communities.*	✓ *A significant opportunity to restore disused buildings to a high standard, and to provide alternative uses to redundant land in order to enhance its biodiversity potential, as well as providing green spaces for communities. Needs clarity on the term 'attractive'.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	✓ *A significant opportunity to promote job creation and self confidence in peripheral communities, especially where linked to the enhancement of their own places.* *Critical that communities are part of any decision making on options.*	✓ *A significant opportunity to promote job creation and self confidence in peripheral communities, especially where linked to the enhancement of their own places.* *Critical that communities are part of any decision making on options, especially on the implications of making an area more 'attractive' for others to relocate to - need to be conscious of domestic implications.* *Important that communities are supported in identifying what is 'attractive'.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	✓ *Some likelihood of enhanced access to land, linked to environmental enhancement. Potential opportunities for countryside management jobs including interpretation, guiding etc.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

SEA Objectives			**Type of Action 07 - Developing and Promoting Socially Inclusive Sustainable Development** Engaging communities in the conservation of their natural and cultural heritage – including creating capacity within communities to engage and share best practice and ideas in innovative community, environmental and economic development; support for the development and promotion of joint environmental enhancement activities; and cross-border partnerships between research stakeholders and the community
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage	✓ *Significant opportunity for conserving discrete areas and sites. Likely to be localised, and medium to long term in effect.*

		Condition of National Heritage Areas - targets in management plans	
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	✓ *Significant opportunity for conserving discrete areas and sites. Likely to be localised and confined to individual sites and buildings.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	✓ *Significant opportunity for conserving habitats linked to communities.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	✓ *Potential for significant positive effect, especially where communities are in upstream environments. Management of waste domestic water is a particular issue, and the promotion of SUDs schemes will be positive.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	✓ *Community programmes that aim to manage land co-operatively to optimise ecosystem scale projects may have a significant effect on water flows.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	✓ *An opportunity for communities to promote local schemes that can re-use redundant buildings and to convert brownfield sites for environmental schemes such as community gardens, allotments etc.*

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**O** *Unlikely to be significant.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	✓ *Engaging communities to manage their spaces for environmental enhancement and for economic opportunity will provide significant opportunities to develop self confidence and resilience to flood risk and other environmental factors, and to take pride in the improvement of their area. Job creation is a likely positive outcome of this action.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	✓ *Community based environmental improvement may result in improved physical access to discrete areas of attractive land. May especially important as a community shared resource.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**O** *Unlikely to be significant.*

SEA Objectives			Type of Action 07 - Developing and Promoting Socially Inclusive Sustainable Development Developing expertise and best practice identifying cross-border models for healthy living through outdoor activities and sport and piloting these models	Sharing expertise on a cross-border basis to make the area a more attractive place to live, relocate, work and visit – including the development of knowledge transfer clusters
Protect places, landscapes and buildings of historic, cultural and archaeological value	Deliver conservation programmes for monuments in state care, alongside the designation of further heritage assets	Initiatives developing the natural and/or historic environment Number and state of Scheduled Ancient Monument (SAM), Listed Buildings, Conservation Areas, Historic Parks & Gardens Sufficiency and condition of sites designated under the EU Habitats Directive Condition of sites on agricultural land Number and condition of listed buildings LANDMAP culture aspects - condition Number of community-owned or managed biodiversity/ amenity assets Register of SAMs - condition status National Inventory of Architectural Heritage Condition of National	**?** *The promotion of outdoor activities and sport may have implications for some sensitive sites, especially on the coast and in some sensitive upland and river areas.* *Type, location and scale need to be considered.*	**✓?** *Potential positive, but issues include impacts on sensitive areas as a result of pressure for development and for 'improving' domestic dwellings. Needs considered discussion of the term 'attractive'.*

		Heritage Areas - targets in management plans		
Protect and enhance landscapes, seascapes, townscapes and the countryside	Improve the quality of the local built environment Develop an integrated approach to eco-system health Improve management of common land Protect and enhance access to the coastline and countryside Avoid significant alteration to urban landscape character	Listed Buildings - trends in condition LDP policies promoting landscape/townscape character Conservation areas and policies Relevant planning applications/approvals Area of common land under management agreements Length and condition of Rights of Way LANDMAP visual and sensory aspects - condition Use of conditions with planning permissions	**?** *As above. It may be possible to identify appropriate site for the management of some outdoor activities away from sensitive areas. May need EIA/AA.* *Type, location and scale need to be considered.*	✓**?** *As above.*

Protect and enhance biodiversity	Protect internationally, nationally and locally designated nature conservation sites Protect Biodiversity Action Plan (BAP) habitats and species, increase area of habitat	Farmland and Woodland Bird Index Trends in key BAP habitats and species Number of Geological Conservation Review sites Number of farms in agri-environment schemes Sufficiency and condition of sites designated under the EU Habitats Directive Conservation status of SAC/SPA features dependent on /impacted on by agriculture Conservation status of target species/habitats dependent on /impacted on by agriculture Conservation status of NNR/SSSI features dependent on/impacted on by agriculture Presence & condition of unfarmed features - hedges, scrub, fallow areas, buffers, trees, ditches & ponds Percentage area of independently certified woodland (such as FSC)	**?** *As above.*	**?** *The term 'attractive', alongside the action to promote relocation and visiting, may have a negative effect on biodiversity in a number of ways including development and physical impact.*

		Lowland/upland farm birds - target species, presence, numbers - overwintering, breeding, spring feeding Woodland birds - target species, presence, numbers - overwintering, breeding, spring feeding Presence/location of invasive species Condition of Geological Conservation Review (GCR) sites that are SSSI's Common land in management agreements

Protect and improve the region's water quality	Monitor and regulate known and emerging environmental hazards Protect and enhance the quality of groundwater, rivers, lakes, and coastal waters Comply with 'good' status under the Water Framework Directive (WFD) Protect and enhance salmonid and other fisheries Avoid physical disturbance to the water and water edge environment Reduce diffuse pollution from agriculture, acid precipitation and other sources	Input of hazardous substances into the aquatic environment River water quality – biological and chemical Bathing water quality Area of Wales designated as nitrate vulnerable zone New developments to incorporate SuDS Number of Strategic Flood Risk Assessment (SFRA) undertaken by Local Authorities Additional population served by water/waste water projects Number of water pollution incidents Bank erosion remediated (length) Number of agriculture-related pollution incidents Eutrophication statistics Estuary water condition Area designated as Nitrate Vulnerable Zone	**?** *Depends on the type of outdoor activity. It is important to ensure that water based activity is compatible with the protection of water quality.*	✓ *Likely positive outcome - enhancement of places should include improvements to water bodies - beware of the term 'attractive', which may mean different things to different people.*

		Number of water pollution incidents, category 1 & 2 Water quality measures in local/county plans Use of conditions /regulations with planning permissions

Protect the water resource and ensure its sustainable use	Maintain levels of abstraction and recharge within the carrying capacity of the region Maintain and enhance ground and surface water physical, ecological and chemical quality Monitor use and discharge rates	Leakage levels Per capita consumption of water Water abstracted (licensed) Water abstracted (unlicensed) Agricultural discharge to water courses Number and cost of flooding incidents	**O** *Unlikely to be significant.*	✓ *As above.*

Guard against land contamination, encourage reuse of existing buildings and of previously developed land of low ecological quality	Use planning policy to identify suitable previously developed land Use planning policy to encourage the re-use of existing buildings Monitor and regulate known and emerging environmental hazards. Maintain and update contaminated land data and strategies	Environmental risk management initiatives Amount of brownfield land remediated/ developed Buildings recycled Policies/targets in local/county development plans	**O** *Unlikely to be significant.*	✓ *A significant opportunity to restore disused buildings to a high standard, and to provide alternative uses to redundant land in order to enhance its biodiversity potential, as well as providing green spaces for communities. Needs clarity on the term 'attractive'.*	

Minimise the requirement for energy generation, promote efficient energy use and increase the use of energy from renewable resources	Generate up to twice as much renewable electricity annually by 2025 as is generated today Introduce higher energy conservation standards in constructing new housing	Enterprises operating Environmental Management Systems at a level that requires monitoring of carbon emissions Energy saved (GWh) Energy intensity of the economy Additional capacity of renewable energy production Number of energy users connected to smart grids Number of households with improved energy consumption classification Decrease of primary energy consumption of public buildings Number of micro-generation schemes established	**O** *Unlikely to be significant.*	**?** *It is possible that increases in numbers relocating to peripheral areas may place pressures on energy. The promotion of energy conservation and locally derived renewables is an important aspect of this action.*

Minimise waste, and increase re-use, recycling and recovery rates	Restrict biodegradable materials going to landfill Re-use materials from existing buildings	Waste reduced, reused or recycled ('000kt) Number of waste management facilities Proportion of End of Life Vehicles waste reused and recycled in the UK Proportion of packaging waste recovered in the UK Proportion of construction and demolition waste reused and recycled Proportion of aggregates derived from secondary and recycled sources	**O** *Unlikely to be significant.*	✓ *Waste management should be a key element in any action to improve an area and make it more attractive to relocate and visit.* *Waste management systems need to be incorporated into proposals.*

Minimise the need to travel; provide alternatives to car use	Optimise opportunities to work locally Promote sustainable transport Protect and enhance public transport systems Legislate to place a duty to provide cycle routes in key areas	Percentage of people whose main mode of travel to work and school is cycling and walking Number of bus routes/ passengers Number of rail passengers per annum Volume of freight transport relative to GDP Volume of passenger transport relative to GDP Availability of public transport (bus and rail) - national, regional, local National Park/county, local buses; taxis; community schemes Promotion of public transport associated with tourism Additional households/businesses with broadband access at least 30 Mbps	**?** *The promotion of outdoor activities and sport may generate a demand to travel.* *Type, location and scale need to be considered.*	**O** *Unlikely to be significant.*

Limit and adapt to climate change	Reduce emissions of greenhouse gases Provide measures to enable adaptation to climate change Ensure infrastructure and material assets are resilient to potential increases in extreme weather events (such as storms, floods and heat waves, as well as extreme cold weather). Ensure that communities are resilient to changes in weather patterns by protecting resources and by promoting awareness of the need to adapt to extreme weather events Build in flexibility to enable the modification of	Environmental risk management initiatives Ecological footprint Annual emissions of basket of greenhouse gases (by sector) People benefiting from flood protection measures Change in soil organic carbon, acidity, nitrogen, biology Water capture Changes in area of grassland and woodland CH_4 emissions Number of micro-generation schemes established Change in ecological footprint Estimated decrease in	**O** *Unlikely to be significant.*	***?*** *It is possible that increases in numbers relocating to peripheral areas may place pressures on energy. The promotion of energy conservation and locally derived renewables is an important aspect of this action.*

	assets in the future without incurring excessive cost. Work to ensure we have a sustainable food and fisheries industry Protect and manage soil Reduce the risk of flooding Complete flood and coastal risk plans	GHG

Protect and improve air quality	Minimise the use of processes that produce toxic air pollutants, and incorporate extensive safety and capture processes for those that occur	Trends in number of days when air pollution is moderate or higher in rural zones and urban agglomerations Level of emissions of sulphur dioxide, ammonia, nitrogen oxides, fine particulates, and volatile organic compounds from the National Atmospheric emissions inventory Number of air pollution incidents Urban population exposure to air pollution by ozone Emissions from commerce and industry Change in ammonia,CH_4, N_2O, ozone Air quality incidents Radon remediation programmes Percentage of sensitive habitat area exceeding critical loads for acidification and eutrophication	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Improve physical and mental health and reduce health inequalities	Minimise environmental nuisance such as fly-tipping, littering, dog fouling, graffiti, noise pollution, and light pollution Promote the provision of opportunities for disadvantaged communities Monitor and regulate known and emerging environmental hazards Protect and enhance existing greenspace	Percentage of people taking various actions to improve the environment Healthy life years at birth by gender Trend in level of fly-tipping (Flycapture database) Percentage of highways and land inspected of a high or acceptable standard of cleanliness Amount, types and quality of greenspace Change in number and extent of tranquil areas Percentage of dark sky at night by area Access to services e.g. GP, hospital, broadband Increase in employment Decrease in poverty	✓ *Outdoor activities and sport provide valuable opportunities for people to adopt healthier living, and therefore this provides a positive opportunity.*	✓? *Critical that communities are part of any decision making on options, especially on the implications of making an area more 'attractive' for others to relocate to - need to be conscious of domestic implications.* *Important that communities are supported in identifying what is 'attractive'.*

Improve public access to land	Improve opportunities to access green space Ensure that disadvantaged communities have opportunities to access greenspace and open countryside and to benefit from such access	Managed access to countryside or coast (km) Area and type of open space and condition Hectares of Open Country and Common Land Length and condition of PROWs and cycleways Amount and condition of accessible land in agri-environment schemes	✓ *As above. Initiatives to promote outdoor activity will promote access to green space and open countryside.*	**O** *Unlikely to be significant.*

Protect seabed features so that they can support the processes, habitats and species characteristic of the marine landscapes.	Protect coastal processes from ecologically-significant change due to human activity, and reverse such change where practicable Protect seabed habitats from ecologically - significant change due to human activity, and reverse such change where practicable Protect biogenic structures from ecologically-significant change due to human activity, and reverse such change where practicable	Concentrations of hazardous substances compared to Environmental Quality Standards (EQSs) Hazardous substances in marine organisms Plastic particles in stomachs of seabirds Organochlorine/mercury concentrations in seabird eggs/feathers Hazardous substances in coastal waters Chlorophyll-a in transitional, coastal & marine waters Bathing Water quality	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect water column features so that they can support the characteristic processes, habitats and species	Protect the water column features from ecologically-significant change due to human activity, and reverse such change where practicable.	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Protect the water quality of the component water column features so they can support the processes, habitats and species characteristic of the water column and associated seabed habitats	Maintain or recover water quality to within defined standards which aim to prevent 'undesirable disturbance' caused by eutrophication Ensure that environmental standards are not exceeded Maintain noise and vibration levels below precautionary standards aimed at protecting vulnerable marine species from disturbance Reduce input of litter to the marine environment to below levels aimed at protecting vulnerable marine habitats and species	As above	**O** *Unlikely to be significant.*	**O** *Unlikely to be significant.*

Maintain biota quality	Ensure standards for contaminants in biota are not exceeded	Number, abundance, diversity and evenness of taxa distribution Percentage of overfished stocks of commercial importance Fish catches by major species and area Accidental by-catch: birds, mammals and turtles Changes in proportion of large fish and hence the average weight and average maximum length of the fish community Aquaculture impact on genetic structure of wild fish populations Seabird population trends	**?** *Marine based outdoor activities, especially where these are motorised, need to be carefully considered for their impacts on marine wildlife. Such activities should be avoided in sensitive areas, and will require careful management guidelines.*	**O** *Unlikely to be significant.*

ANNEX 3 - IRELAND WALES CO-OPERATION PROGRAMME – SEA SCOPING REPORT CONSULTATION RESPONSES

Overview of Key Points/Issues raised and Responses

CONSULTEE	REFERENCE	COMMENT	RESPONSE
Environmental Protection Agency Ireland (IEPA)	General	Welcomes level of detail in scoping report.	Noted
IEPA	Integration of climate change	Three guidance documents to be referred to	Noted and included in references.
IEPA	Programme and SEA objectives	*... there would be merits in describing what the Programme can and cannot do with respect to achieving the thematic and specific objectives for these priority axes*	Noted, but the SEA reflects the OP. 'Cannot do' is perhaps too broad at this level.
IEPA	SEA recommendations	Need to ensure that any recommendations arising from the SEA are integrated as appropriate into the Programme	This will be a recommendation of the SEA and a requirement under the SEA Directive.
IEPA	Transboundary collaboration	Opportunities for transboundary collaboration should be included within the scope of the assessment including relevant aspects of the Water Framework Directive River Basin Management Plans	The SEA is based on the types of action presented. The potential for transboundary environmental effects is discussed.
IEPA	WFD/Climate change objectives	Potential for conflict between objectives of the relevant WFD River Basin Management Plans and climate change implications? Need to ensure suitable mitigation measures	Depends on the nature of the conflict. Any suite of environmental objectives contains tensions. At this level it is only possible to assert the need for appropriate mitigation. The HRA will raise similar concerns.

IEPA	Monitoring	Monitoring related considerations should also be highlighted with regard to the environmental criteria to be scoped into the SEA.	See report section of the main report.
IEPA	Integrity of transboundary ecologica links	Consideration should also be given to including a commitment to protect the integrity of existing transboundary ecological linkages / corridors and European/National designated conservation sites	Noted. This is particularly relevant to the HRA report and will be expressed in it.
IEPA	Reference	refer to the EPA's *Ireland's Environment – an Assessment 2012* (EPA, 2012),	References have been made in section 4. Useful contextual reference, although all-Ireland.
IEPA	Consultation	• The Minister for the Environment, Community & Local Government • Minister for Agriculture, Marine and Food, and the Minister for Communications Energy and Natural Resources, where it appears to the planning authority that the plan or programme, or modification of the plan or programme, might have significant effects on fisheries or the marine environment	WEFO to note for referring the draft ER.

Natural Resources Wales (NRW)			
NRW	Ecosystem approach/sub-objective	Welcomes references to the ecosystem approach & inclusion of sub-objective on an integrated approach - recommend the theme to be further developed	Noted
NRW	Objectives	Welcomes the majority of the assessment objectives - need to be rationalised and more focused.	Noted, and recognise the point made. Concerned to be inclusive rather than exclusive. May be scope for reducing number of sub-objectives where they appear to be less relevant at assessment stage. The sub-objectives provide meaning to the main objectives.
NRW	Place-based decision making	More of a focus on the role of place based decision making - help demonstrate the principles of community ownership	Noted, especially in the context of SEA objectives and ToAs 3 and 7
NRW	Assessment of effects	Figure 3 'Types of Action (ToA) and environmental implications', ToA 6.1 & 6.2 (pp 16) and Section 9.8 'Threats to marine biodiversity' (pp 63). These sections should also include reference to potential non-native invasive species issues in relation to promoting cross border maritime tourism.	Noted and incorporated
NRW	Sub-objectives	Objective 10 'limit and adapt to climate change' Sub-objective 'ensure infrastructure and material assets are resilient to climate change' (pp67). We recommend that this sub-objective also includes reference to ensuring resilient communities.	Noted and incorporated

NRW	Sub-objectives	Objective 12 'improve physical and mental health' and objective 13 'improve public access to land'. The sub-objectives should include the need to provide opportunities for disadvantaged communities.	Noted and incorporated
NRW	Habitats Regulations Assessment	Request for clarification on HRA	Confirm that an HRA will be carried out

Dept. of Agriculture, Food & the Marine Ireland (DAFM)	References	Relevant legislation, plans and policies listed, as well as various publications and reports	Noted and included where relevant
DAFM	Marine environment	Need to consider potential impacts, both positive and negative, on marine environmental quality including potential impacts on designated Shellfish Growing Waters	Noted - see ToA5 action 12
DAFM	Human health	Potential impacts on human health resulting from the placing on the market of microbiologically contaminated shellfish	Noted. An important concern - R&D related to improving water quality. ToA 5 - 12
DAFM	Fisheries - impacts on commercially important fish stocks/aquaculture	Potential impacts on commercially important fish and shellfish stocks, licensed aquaculture sites and areas of importance for fish / shellfish and fisheries e.g. spawning grounds, nursery areas	Noted, but not known whether actions deriving from this programme will relate to this concern - need for water management a key consideration

DAFM	Impacts on commercially important fish stocks/aquaculture	Potential impacts on freshwater aquaculture operations including the requirement for water abstraction and capacity of the receiving waters to assimilate discharges	As above.
DAFM	Designated aquaculture/fiheries areas	Future designations of areas of importance to the Aquaculture & Fisheries Sector	Relevant to the programme where it relates to actions on tourism development, water management, community based inititives on coasts and upstream.
DAFM	References	Relevant EU Directives and National Legislation in the area of Marine Spatial Planning	Noted and included
DAFM	Consultees	Four consultees referred to at draft ER stage	Noted
DAFM	Consultees	Consideration should also be given to consulting directly with the seafood sector. This may include fisheries representative bodies, including producer organisations, local advisory committees, associations, co-operatives; seafood processors; aquaculture representative bodies, etc.	A legitimate concern that should be part of the process of programme and project development. An issue for the programme developers.