

European Territorial Co-operation Cross Border Programme for Northern Ireland, the Border Region of Ireland and Western Scotland for 2014 – 2020 (INTERREG V)

Strategic Environmental Assessment (SEA) Environmental Report



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1. INTRODUCTION

1.1. Purpose of this Report

1.1.1. ADAS has been instructed by the Special EU Programmes Body (SEUPB) to carry out a Strategic Environmental Assessment (SEA) of the EU Programme for Cross Border Territorial Cooperation (INTERREG V) 2014 - 2020.

1.1.2. SEA is a systematic process for evaluating the environmental consequences of proposed plans or programmes to ensure environmental issues are fully integrated and addressed at the earliest appropriate stage of decision making, with a view to promoting sustainable development. The process of SEA was introduced under European Directive 2001/42/EC¹² on the assessment of the effects of certain plans and programmes on the environment (SEA Directive), and came into force in 2001.

1.1.3. The Directive requires SEUPB, as the programming authority, to assess the likely significant effects of its plans and programmes on: *“the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship of the above factors” including “secondary, cumulative, synergistic, short, medium, and long-term, permanent and temporary positive and negative effects”*.

1.1.4. The requirements of the SEA Directive are transposed into Northern Ireland domestic law through the Environmental Assessment of Plans and Programmes Regulations (Northern Ireland) 2004 (SR 280/2004); into Irish domestic law through the European Communities (Environmental Assessment of Certain Plans and Programmes) Regulations 2004 (Irish SI 435/2004 and SI 200/2011), and the Planning and Development (Strategic Environmental Assessment) Regulations 2004 (Irish SI 436/2004 and SI 201/2011); and into Scottish domestic law through the Environmental Assessment (Scotland) Act 2005. Also of relevance is the

Environmental Assessment of Plans and Programmes Regulations 2004 (SI 1633/2004) (the UK Regulations).

1.1.5. The purpose of this report is to carry out an evaluation of the likely environmental effects of implementation and non-implementation of the INTERREG V Programme as per the requirements of the Directive and Regulations. This includes an assessment of realistic strategic alternative approaches and options, as well as the suggestion of mitigation and enhancement measures to prevent, reduce and offset any significant adverse effects on the environment of implementing the Programme.

1.1.6. This report has been issued to the statutory consultation bodies by SEUPB, and is available to view and comment on by other interested organisations and members of the public for a period of eight weeks. More detail on the consultation period is available in Chapter 7.

1.2. Structure of this Report

1.2.1. The areas considered in this Environmental Report, and their location in the document, are as follows:

- Summary of the INTERREG V Programme – Section 1.3;
- Summary of scoping consultation responses – Section 2.1 and Appendix A;
- Relationship with other plans, programmes and conservation objectives – Sections 2.2 and 5.3 and Appendix B;
- Relevant aspects of the current state of the environment – Section 2.3 and Appendix C;
- Existing environmental problems and the likely evolution of the environment without the INTERREG V Programme – Section 2.4;
- SEA Objectives and assessment methodology – Chapter 3;
- Consideration of alternatives and difficulties encountered – Chapter 4;
- Identification and assessment of likely significant effects on the environment – Chapter 5 and Appendix D;
- Mitigation and enhancement measures – Chapter 6; and

- Proposed monitoring programme and next steps regarding the statutory consultation process – Chapter 7.

1.2.2. A non-technical summary of the information provided in this report has been provided separately.

1.3. The INTERREG V Programme

1.3.1. The INTERREG Programme was first introduced in 1991. There have been four previous INTERREG Programmes: INTERREG I (1991-1993), INTERREG II (1994-1999), INTERREG III (2000-2006) and INTERREG IV (2007-2013). A sustained approach to cross border development was needed to build on the progress made under the previous programmes.

1.3.2. The INTERREG V Programme for Northern Ireland, the Border Region of Ireland and Western Scotland 2014-2020 is a European Union supported Structural Funds Programme, subject to the provisions of the European Territorial Co-Operation Regulation COM(2011) 611 (the draft ETC Regulations).

1.3.3. Northern Ireland (NI), the Border Region of Ireland and Western Scotland face particular economic and social challenges arising from the existence of national borders. The problems are exacerbated by geographical isolation and lack of cohesion in service delivery. The borders cause natural markets to fragment and reduces the opportunity for economic interaction and hinders the development of economies of scale. The border regions in general exhibit lower levels of economic and social development. Separate approaches to policy such as transport, health and education can also have detrimental effects on border areas. This has led to added challenges in resolving the problems felt by border regions.

Aims and Objectives

1.3.4. The INTERREG V Programme aims to support strategic cross border cooperation for a more prosperous region and improve access to services so that the quality of life for those living in the eligible area is enhanced. The programme focuses on developing a dynamic economy by

supporting infrastructure and promoting innovative ways of addressing specific cross border problems regarding isolated labour markets, vulnerable groups and transport bottlenecks. By strengthening cross-border co-operation and supporting strategic plans and projects, the impact of funds throughout the eligible area will be maximised.

1.3.5. The programme will achieve added value by promoting cross border cooperation between public administrations which will help to achieve more balanced regional development, strengthen competitiveness, improve access and services to facilities, ensure better value for money and address the negative effects of the border. Cooperation between territories can also provide an effective mechanism for sharing good practice and avoid disproportionate costs for some and free-riding by others e.g. regarding cross-border environmental pollution and management of sea basins and coastal regions.

1.3.6. The draft ETC Regulations state that cooperation programmes should contribute to: developing an economy based on knowledge, research and innovation; promoting a greener, more resource-efficient and competitive economy; fostering high employment that delivers social and territorial cohesion; and developing administrative capacity. However, the list of the investment priorities under the different thematic objectives should be adapted to the specific needs of the European territorial cooperation goal, in particular by allowing for the continuation of legal and administrative cooperation as well as maritime cross-border cooperation not covered by other programmes.

1.3.7. In addition to the 11 Thematic Objectives and 32 Investment Priorities set out in the draft ERDF Regulations (COM(2011) 614), the draft ETC Regulations state that cross-border cooperation programmes may additionally support the following 4 Investment Priorities:

- Integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives and joint training (within Thematic Objective 8);

- Promoting gender equality and equal opportunities across borders, as well as promoting social inclusion across borders (within Thematic Objective 9);
- Developing and implementing joint education and training schemes (within Thematic Objective 10); and
- Promoting legal and administrative cooperation and cooperation between citizens and institutions (within Thematic Objective 11).

1.3.8. SEUPB has been working with stakeholders and the public to identify and develop up to four themes to focus the delivery of INTERREG V, as required by the draft ETC Regulations. Potential themes have been reviewed against the following criteria:

- The fit with the thematic objectives and need for concentration as outlined in the draft ETC Regulations;
- The priorities of Government Departments in NI / Republic of Ireland (RoI) / Scotland;
- Demonstrated cross border added value;
- Complementarity with the European Regional Development Fund (ERDF) and European Social Fund (ESF) programmes which are being developed respectively by the NI Government departments Enterprise, Trade and Investment (ETI) and Employment and Learning (EL);
- The anticipated absorption capacity of proposed themes as evidenced by a project pipeline;
- The findings of the socio-economic review; and
- The views expressed in the EU Commission's position paper.

1.3.9. SEUPB has considered Thematic Objectives 1, 4, 6, 7 and 9 of the draft ETC Regulations (the same as listed in the draft ERDF Regulations plus 4 additional Investment Priorities). The proposals put forward as potential Programme content fall within Thematic Objectives 1, 6, 7 and 9 omitting Thematic Objective 4. The proposals are presented below under the corresponding Objectives and Priorities. The final suite of proposals

under each Priority will be determined based on responses to the public consultation and final budget allocation.

Thematic Objective 1: Strengthening Research, Technological Development and Innovation.

Investment Priority 1: Enhanced Research and Innovation.

Research, Development & Innovation is already a policy objective for each jurisdiction making up the region. However, the INTERREG V Programme presents an opportunity to encourage the creation of new cross-border partnerships.

Two sectors have been chosen for investment by the Programme. Targeting on these sectors was agreed based on the scale of the growth opportunity, the technical capacity and structure of higher education in the three jurisdictions and compatibility with pre-existing policy priorities.

- Life & Health Sciences
- Renewable Energy

Investment Priority 2: Promoting Business Investment in Research & Innovation.

The Programme aims to increase the awareness and engagement of the Programme region's SME dominated business base with research and innovation.

Thematic Objective 6: Preserving and Protecting the Environment and Promoting Resource Efficiency.

Investment Priority 1: Protecting and Restoring Biodiversity

This investment priority recognises the potential for cross-border initiatives to preserve and enhance the natural environment, with a particular focus on the marine environment where the three jurisdictions share resources.

Investment Priority 2: Investing in the Water Sector

Many of the water bodies located within the region straddle national boundaries. Investment in cross-border initiatives therefore provide the

opportunity to deliver water quality improvements across the programme area and to enhance water management expertise across the Programme area.

Thematic Objective 7: Promoting Sustainable Transport and Removing Bottlenecks in key Network Infrastructures.

Investment Priority: Developing and improving environmentally friendly and low carbon transport systems, including inland waterways and maritime transport, ports, multi-modal links and airport infrastructure, in order to promote sustainable regional and local mobility.

This investment priority recognises that in the predominantly rural communities covered by the Programme there is a reliance on car use as public transport provision is often poor. There are also issues with connectivity of public transport across borders, again increasing the reliance on car use. The investment priority aims to support the development of other, more sustainable, means of transport in border areas.

Thematic Objective 9: Promoting Social Inclusion, combatting poverty and any discrimination.

Investment Priority 1: Investing in health infrastructure.

This investment priority provides greater opportunity for delivery of cross-border health care services which contribute to regional and local development and support the transition from institutional to community based services. Specifically, the Programme will seek to fund cross-border healthcare intervention trials, contributing to improved access to healthcare treatments that would not otherwise be available.

Technical Assistance

- 1.3.10. Further funds are allowed under Priority Axis 5: Technical Assistance. This effectively comprises the fifth component of the OP delivery with the objective that: “*technical assistance will be used to facilitate the efficient and effective implementation of the Programme in*

order that the maximum impact is achieved in compliance with all the EU regulations”.

1.4. Characterisation of the INTERREG V Programme Area

- 1.4.1. NI is one of three Devolved Administrations in the UK. It is a predominantly rural region, with 80% of the landmass in agricultural and forestry use. Almost two fifths of the urban population live within the Belfast Metropolitan Area with another sizeable concentration of population around Derry/Londonderry. The region has distinctive cultural heritage (archaeological and historic features from 9,000 years of human activity) and retains strong rural dimensions through the importance of agriculture, tourism and their interactions with the landscape.
- 1.4.2. The Border region of the RoI is made up from the geographical area of Counties Cavan, Donegal, Leitrim, Louth, Monaghan and Sligo. It encompasses an area of 12,156 sq. km. from the Atlantic Ocean on the West Coast to the Irish Sea on the East Coast. One of the key strengths of the Region is its areas of attractive rural and coastal landscapes. These, along with its strong cultural and heritage assets, make it an area very suitable for a strong tourism base. The population of the Border Region is 515,000 (2013). This is equivalent to 11% of the RoI population.
- 1.4.3. Western Scotland is made up of Dumfries and Galloway; East Ayrshire and North Ayrshire mainland; South Ayrshire; and Lochaber, Skye & Lochalsh, Arran & Cumbrae and Argyll & Bute. The population of this area is just under 610,523, constituting 12% of the overall population of Scotland (2011).
- 1.4.4. The Nomenclature of Territorial Units for Statistics (NUTS) is a geocode¹ standard for referencing the subdivisions of member states of the European Union. The NUTS standard is instrumental in delivering the European Union's Structural Funds; a hierarchy of three levels – NUTS 1, 2 and 3 – is established by Eurostat. NI itself is classed as both a NUTS 1 and 2 region; thereafter it is divided into five NUTS 3 regions. The

¹ Geocoding is the process of finding geographic coordinates (often expressed as latitude and longitude) that can be mapped in GIS systems from other geographic data such as postal addresses.

Republic of Ireland (RoI) is classed as a NUTS 1 region, and is split into two NUTS 2 regions: Border, Midland and Western which comprises three NUTS 3 regions; and Southern and Eastern which comprises five NUTS 3 regions. Scotland is a NUTS 1 region comprising four NUTS 2 regions, and 23 NUTS 3 regions.

1.4.5. The geographic area covered by the INTERREG V Programme (shown in Figure 1.1 below) comprises:

- NI: Five NUTS 3 regions comprising Belfast (UKN01), Outer Belfast (UKN02), East of NI (UKN03), North of NI (UKN04) and West and South of NI (UKN05);
- RoI: The NUTS 3 Border Region (IE011) comprising the six counties of Cavan, Donegal, Leitrim, Louth, Monaghan and Sligo;
- Scotland: Four NUTS 3 regions in Western Scotland that include: Dumfries and Galloway (UKM32), East and North Ayrshire (UKM33), South Ayrshire (UKM37) and Lochaber, Skye and Lochalsh, Argyll and the Islands (UKM63).



Figure 1.1: Geographic Coverage of the INTERREG V Programme

1.4.6. Table 1.1 below provides statistics on the land area, population size and population density of the NUTS 3 regions included in the INTERREG V Programme, with country statistics for NI, the RoI and Scotland shown as a comparison.

Table 1.1: Area and Population of the INTERREG V Territories

Region	Area (km ²)	Population (2011 MYE)	Population Density (people/km ²)
NUTS 3 Regions			
Belfast (UKN01)	110	267,551	2,432
Outer Belfast (UKN02)	846	389,959	461
East of NI (UKN03)	3,422	442,472	129
North of NI (UKN04)	3,220	288,469	90
West and South of NI (UKN05)	6,552	418,422	64
Border Region of RoI (IE011)	12,156	432,500	36
Dumfries & Galloway (UKM32)	6,426	148,060	23
East Ayrshire and North Ayrshire Mainland (UKM33)	1,712	248,635	145
South Ayrshire (UKM37)	1,222	111,560	91
Lochaber, Skye & Lochalsh and Argyll & the Islands (UKM63)	14,238	102,268	7
INTERREG V Territories			
NI	14,150	1,806,873	128
Border Region of Ireland	12,156	432,500	36
Western Scotland	23,598	610,523	26
Country Comparisons			
NI	14,150	1,806,873	128
RoI	70,273	4,588,252	65
Scotland	78,387	5,295,400	68

1.4.7. There are a number of nature conservation, landscape and cultural heritage designations in each of the INTERREG V territories. In the UK, these are designated as either statutory (protected by law) or non-statutory (a material planning consideration), and can be of international, national or local importance. Information on local and/or non-statutory designations is held by individual local authorities and has not been obtained for this strategic level assessment.

1.4.8. The number of statutory nature conservation, landscape and cultural heritage designated sites that are located either wholly or partially within each of the INTERREG V territories are provided in Table 1.2 below (derived from Geographic Information System (GIS) data). It should be

noted that in Ireland, all heritage and archaeological assets are given statutory protection. Additional information on what these designations mean is provided in Chapter 2.

Table 1.2: Number of Designated Sites in INTERREG V Territories

	NI	Border Region of Ireland	Rol Total	Western Scotland	Scotland Total
Special Protection Areas (SPA)	17	40	121	40	153
Special Areas of Conservation (SAC)	57	83	423	80	239
Ramsar sites	21	9	45	15	51
Areas of Special Scientific Interest (ASSI; NI) / Natural Heritage Areas (Rol) / Sites of Special Scientific Interest (SSSI; Scot.)	360	24	148 (+630)	387	1,453
National Nature Reserves	8	7	17	14	47
World Heritage Sites	1	1	2	0	5
Scheduled Monuments (NI & Scot.) / Recorded Monuments (Rol)	1,901	17,674	120,000	2,267	8,177
Monuments in State Care	190	85	741	85	325
Listed Buildings (NI & Scot.) / Protected Structures (Rol)	8,497	2,280	38,171	11,379	47,000
Historic Parks, Gardens and Demesnes (NI) / Designed Landscapes (Rol) / Gardens and Designed Landscapes (Scot.)	248	98	?	78	392
National Parks	0	0	6	1	2
Areas of Outstanding Natural Beauty (AONB; NI & Rol) / National Scenic Areas (Scot.)	8	0	0	12	40

1.5. The SEA Process

1.5.1. The SEA Guide produced by ODPM (now DCLG), the Welsh Assembly Government and DOE in 2005, in common with other SEA guidance

documents, sets out a five stage process for carrying out SEA. These stages are summarised in Table 1.3 below.

Table 1.3: Stages in the SEA Process

Stage	Tasks
Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope	A1: Identifying other relevant plans, programmes and environmental protection objectives
	A2: Collecting baseline information
	A3: Identifying environmental problems
	A4: Developing SEA objectives
	A5: Consulting on the scope of SEA
Stage B: Developing and refining alternatives and assessing effects	B1: Testing the plan or programme objectives against the SEA objectives
	B2: Developing strategic alternatives
	B3: Predicting the effects of the plan or programme, including alternatives
	B4: Evaluating the effects of the plan or programme, including alternatives
	B5: Mitigating adverse effects
	B6: Proposing measures to monitor the environmental effects of plan or programme implementation
Stage C: Preparing the Environmental Report	C1: Preparing the Environmental Report
Stage D: Consulting on the draft plan or programme and the Environmental Report	D1: Consulting the public and Consultation Bodies on the draft plan or programme and the Environmental Report
	D2: Assessing significant changes
	D3: Making decisions and providing information
Stage E: Monitoring the significant effects of implementing the plan or programme on the environment	E1: Developing aims and methods for monitoring
	E2: Responding to adverse effects

1.5.2. This Environmental Report is the main output of Stages B and C of the SEA process presented above. Chapter 7 discusses in more detail the subsequent stages and outputs of the SEA process.

1.6. Sustainability Topics

1.6.1. The baseline data, key environmental issues and SEA Objectives have been presented through a series of sustainability topics derived from Annex I(f) of the SEA Directive, namely: biodiversity, flora and fauna;

population; human health; soil; water; air; climatic factors; material assets; cultural heritage (including architectural and archaeological heritage); landscape; and the inter-relationship between these.

1.6.2. The topics considered in the SEA will be in accordance with these requirements, updated to align more closely with the requirements of the Programme, and expanded for clarity; see Table 1.4 below.

Table 1.4: Sustainability Topics

Sustainability topic	Sub-Topics	Relevant topic in SEA Directive
Ecology and Nature Conservation	Internationally and nationally designated sites (including those in the marine environment) Locally designated sites and priority habitats Protected and priority species Biodiversity outside designations Ecological networks and connectivity	Biodiversity Flora and fauna
Socio-Economics	Accessibility to education, employment, housing and community facilities/services Deprivation, inequality and exclusion Crime and road safety Population size, density and structure	Population
Health and Quality of Life	Health and wellbeing Walking, cycling and access to greenspace Health deprivation Noise and vibration	Human health
Soil and Land Use	Soil and agricultural land quality Provision of land-based goods and services Previously developed and contaminated land Carbon storage and water attenuation Geology (including designated sites)	Soil
Water	Water resources and availability Water quality Flood risk	Water
Air Quality	Air pollution (both national and local levels) Travel and transport	Air
Climate Change	Energy conservation and efficiency Renewable energy Sustainable transport Adaptation to relevant climate change risks and opportunities, such as flooding and global warming	Climatic factors
Material Assets	Natural resources including minerals Material recovery, re-use and recycling Waste generation and disposal	Material assets

Sustainability topic	Sub-Topics	Relevant topic in SEA Directive
Cultural Heritage	Designated and non-designated built heritage Archaeological assets Quality and character of townscape / village-scape Intangible culture and traditions	Cultural heritage (including architectural and archaeological heritage)
Landscape	Quality and character of landscape, seascape and coastal areas Designated and other important sites (including greenspace) Visual aesthetics Light pollution	Landscape
Green Infrastructure and Ecosystem Services	Connectivity and multi-functionality of green and blue spaces including ecological networks Provisioning services that GI provides, e.g. food, fuel and freshwater Regulating services that GI provides, e.g. control of natural processes such as soil, air and water quality and climate regulation Cultural services that GI provides, e.g. recreational, educational and ethical benefits Supporting services that GI provides e.g. habitat and natural cycles	The inter-relationship between these

2. FINDINGS OF THE SCOPING PROCESS

2.1. Scoping Consultation Responses

2.1.1. A Scoping Report outlining the proposed approach and key issues to be considered in the SEA was prepared and submitted to SEUPB on 14th May 2013. The SEA Directive requires authorities with “environmental responsibilities” (hereafter referred to as the Consultation Bodies) to be consulted on the scope and level of detail of the information which must be included in the Environmental Report (Article 5(4)). The Directive does not require full consultation with the public or bodies other than Consultation Bodies until the Environmental Report on the programme is finalised.

2.1.2. The Scoping Report was issued by SEUPB to the Consultation Bodies on 23rd May 2013. These included: in Northern Ireland, the Northern Ireland Environment Agency (NIEA) on behalf of the Department of the Environment (DOE); in Ireland the Environment Protection Agency (EPA), the Department of the Environment, Communities and Local Government (DECLG), and the Department for Communications, Energy and Natural Resources (DCENR); and in Scotland, the Scottish Environmental Protection Agency (SEPA), Scottish Natural Heritage (SNH) and Historic Scotland via the Scottish Executive SEA Gateway. The Scoping Report was also made available to other interested environmental organisations.

2.1.3. Consultation Bodies must provide a view, once consulted by SEUPB, within five weeks. Responses were received from the NIEA, EPA, SEPA, SNH and Historic Scotland, as well as from Inland Fisheries Ireland (the state agency responsible for inland fisheries and sea angling in Ireland). Consultation responses on the Scoping Report are reproduced in Appendix A, along with a comment on how they have been accounted for in the preparation of this Environmental Report.

2.2. Other Plans, Programmes and Environmental Protection Objectives

2.2.1. Assessing the relationship of the INTERREG V Programme with the existing International, European and National framework of plans and programmes and identifying gaps and conflicts is a key part of the SEA

process. This includes the consideration of statutory and non-statutory environmental protection objectives.

2.2.2. The scoping process involved an initial review of plans, programmes and environmental protection objectives. This revealed that in the majority of cases the INTERREG V Programme is expected either to support the other plans and programmes through similar objectives or to have no relationship with them.

2.2.3. Plans and programmes containing environmental protection objectives which are relevant to the INTERREG V Programme are listed below in Table 2.1. Further information on how these objectives will be supported through the Programme is given in Appendix B.

Table 2.1: Relationship with other plans and programmes

Plan or Programme <u>directly supports</u> / is supported by INTERREG V	Plan or Programme <u>indirectly supports</u> / is supported by INTERREG V
DARD (2012) Rural White Paper Action Plan	DARD (2013) Greenhouse Gas Reduction Strategy and Action Plan
DARD (2012) Strategic Plan 2012-2020	DARD (2007) Flood Mapping Strategy for Northern Ireland
DARD (2012) Tackling Rural Poverty and Social Isolation	Defra and DOE (2012) A Climate Change Risk Assessment for Northern Ireland
DARD (2010) Renewable Energy Action Plan	DOE (2006) An Integrated Coastal Zone Management Strategy for Northern Ireland 2006 – 2026
DETI (2012) Sustainable Energy Action Plan 2012-2015	DOE (2006) Water Framework Directive Monitoring Plans
DOE (2013) Prioritised Action Framework for Natura 2000	OFMDFM (2013) Together: Building a United Community Strategy
DOE (2012) Northern Ireland Greenhouse Gas Emissions Reduction Action Plan	SNIFFER (2007) Preparing for a Changing Climate in Northern Ireland
DOE (2010) PPS21: Sustainable Development in the Countryside	DAHG (2011) A National Landscape Strategy for Ireland
DOE (2002) Biodiversity Strategy	DCMNR (2007) Delivering a Sustainable Energy Future for Ireland: The Energy Policy Framework 2007-2020
NIEA (2012) Strategic Priorities 2012-2022	DECLG (2012) National Climate Change Adaptation Framework: Building Resilience to Climate Change
NIEA (2009) Neagh Bann International River Basin Management Plan	Historic Scotland (2011) Scottish Historic Environment Policy
NIEA (2009) North Eastern River Basin Management Plan	Marine Scotland and Scottish Government (2013) Blue Seas - Green Energy: A

	Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters
NIEA (2009) North Western International River Basin Management Plan	Scottish Government (2011) Scotland's Climate Change Adaptation Framework and Sector Action Plans
Northern Ireland Executive (2011) Programme for Government 2011-15	Scottish Government (2011) Scotland's Zero Waste Plan
Northern Ireland Executive (2010) Sustainable Development Strategy	Scottish Government (2009) Local Air Quality Management – Revised Policy Guidance
DAFM (2012) Our Ocean Wealth: An Integrated Marine Plan for Ireland	Scottish Government (2008) Equally well: Implementation Plan
DCENR (2012) Strategy for Renewable Energy: 2012-2020	SEPA and Scottish Government (2012) Flood Risk Management Planning in Scotland: Arrangements for 2012 – 2016
DCENR (2010) Draft Offshore Renewable Energy Development Plan (OREDPA) for Ireland	Defra, Scottish Government, Welsh Assembly Government and DOE (2010) Air Pollution: Action in a Changing Climate
DECLG (2012) A Resource Opportunity: Waste Management Policy in Ireland	Defra, Scottish Executive, Welsh Assembly Government and DOE (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland
DECLG and Marine Institute (2012) Ireland's Marine Strategy Framework Directive Implementation	HMSO (2005) Sustainable Development Strategy
DEHLG (2007) Ireland National Climate Change Strategy 2007-2012	IHPC (2010) Review of Local Air Quality Management: A report to Defra and the devolved administrations
EPA (2009) Shannon International River Basin Management Plan	EC (2013) Adaptation Strategy
Scottish Enterprise, HIE, Scottish Funding Council and SEPA (2009) Environmental and Clean Technologies Action Plan	EC (2009) Sustainable Development Strategy
Scottish Government (2013) Scottish Planning Policy: Consultation Draft	EC (2007) EU Floods Directive
Scottish Government (2011) 2020 Routemap for Renewable Energy in Scotland	Plan or Programme has potential <u>conflicts with</u> INTERREG V
Scottish Government (2011) Getting the best from our Land: A land use strategy for Scotland	DOE (2013) Draft Strategy for Marine Protected Areas in the Northern Ireland Inshore Region
Scottish Government (2009) Climate Change Programme Delivery Plan: Meeting Scotland's Statutory Climate Change Targets	DOE (2013) PPS2: Natural Heritage
Scottish Government (2009) The Scottish Soil Framework	DOE (2012) Draft Northern Ireland Marine Position Paper
Scottish Government (2009) Scotland River Basin Management Plan 2009-2015	DOE (2006) PPS15 Planning and Flood Risk

Scottish Government (2008) Achieving our Potential: A Framework to tackle poverty and income inequality in Scotland	Border Regional Authority (2010) Regional Planning Guidelines 2010-2022
Scottish Government and Environment Agency (2009) Solway Tweed River Basin Management Plan 2009-2015	DEHLG (2009) Guidelines for Planning Authorities 20: The Planning System and Flood Risk Management
Scottish Government, SEPA, HIE and Scottish Enterprise (2010) A Low Carbon Economic Strategy for Scotland	NPWS (2011) Actions for Biodiversity 2011-2016 - Ireland's National Biodiversity Action Plan
HM Government, Northern Ireland Executive, Scottish Government and Welsh Assembly Government (2011) UK Marine Policy Statement	Scottish Government (2013) Planning Scotland's Seas: Possible Nature Conservation Marine Protected Areas Consultation Overview
EC (2013) Action Plan for a Maritime Strategy in the Atlantic Area	
EC (2011) Biodiversity Strategy	
EC (2010) Europe 2020 Economic Strategy	

2.2.4. The plans and programmes identified through the scoping process as potentially likely to have adverse in-combination effects with the INTERREG V Programme (which are assessed in Section 5.3 of this report where relevant), are:

Northern Ireland

- DARD (2010) Renewable Energy Action Plan;
- DETI (2012) Offshore Renewable Energy Strategic Action Plan 2012-2020;
- DETI (2012) Sustainable Energy Action Plan 2012-2015 ;
- DOE (2012) Draft Northern Ireland Marine Position Paper;
- DOE (2006) An Integrated Coastal Zone Management Strategy for Northern Ireland 2006 – 2026;
- DRD (2012) Ensuring a Sustainable Transport Future: A New Approach to Regional Transportation;
- DRD (2010) Regional Development Strategy 2035;
- DSD (2013) Urban Regeneration and Community Development Policy Framework;
- Northern Ireland Executive (2012) Economy and Jobs Initiative;

- Northern Ireland Executive (2012) Northern Ireland Economic Strategy;
- Northern Ireland Executive (2008) Investment Strategy for Northern Ireland 2008-2018;
- OFMDFM (2013) Together: Building a United Community Strategy

Republic of Ireland

- DCENR (2013) Ireland's second National Energy Efficiency Action Plan to 2020;
- DCENR (2012) Strategy for Renewable Energy: 2012-2020;
- DCENR (2010) Draft Offshore Renewable Energy Development Plan (OREDPA) for Ireland;
- Department of the Taoiseach (2008) Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal 2009-2014;

Scotland

- Marine Scotland and Scottish Government (2013) Blue Seas - Green Energy: A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters;
- Scottish Government (2011) 2020 Routemap for Renewable Energy in Scotland;
- Scottish Government (2011) The Government Economic Strategy;
- Scottish Government (2008) Achieving our Potential: A Framework to tackle poverty and income inequality in Scotland;
- Scottish Government, SEPA, HIE and Scottish Enterprise (2010) A Low Carbon Economic Strategy for Scotland;

Europe

- EC (2010) Europe 2020 Economic Strategy.

2.3. Summary of Baseline Data

2.3.1. Schedule 2 of the NI SEA Regulations specifies that the Environmental Report must contain the following information in respect of baseline conditions:

“2. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme.

3. The environmental characteristics of areas likely to be significantly affected.

4. Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Council Directive 79/409/EEC on the conservation of wild birds and the Habitats Directive.”

2.3.2. A summary of the current state of the environment in Northern Ireland, the Republic of Ireland and Scotland in respect of each of the sustainability topics is provided below; maps are provided in Appendix C. A more detailed baseline description is provided in the Scoping Report. Analysis of baseline information has been carried out to provide an evidence base for current and likely future environmental conditions without the Programme (it must be noted that SEUPB does not have responsibility for environmental issues, and most lie entirely outwith its remit). Key environmental and sustainability issues for Northern Ireland, Republic of Ireland (including the Border Region) and Scotland (including Western Scotland) have also been identified.

2.3.3. Information for this section has been obtained from, in Northern Ireland the Department for Environment (DOE), Northern Ireland Environment Agency (NIEA), and Northern Ireland Statistics and Research Agency (NISRA) websites; in RoI, the National Parks & Wildlife Service (NPWS), Environmental Protection Agency (EPA) and Forest Service websites; and in Scotland, Scottish Natural Heritage (SNH), Scottish Environmental Protection Agency (SEPA), Joint Nature Conservancy Council (JNCC),

Scottish Executive Environment and Rural Affairs Department (SEERAD) and General Register Office (GRO) for Scotland websites. Information has also been drawn from the Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis carried out by SEUPB, and other documents as referenced in the final chapter of this report.

Ecology and Nature Conservation

Strengths and Opportunities

- NI has a large area of land of international nature conservation value, including 17 Special Protection Areas (SPAs) designated under the EC Birds Directive (9 of which are designated for marine components); 57 Special Areas of Conservation (SACs) designated under the EC Habitats Directive (9 of which with marine components); and 21 Ramsar sites designated under the Convention on Wetlands (7 with marine components). SPAs and SACs are known collectively as Natura 2000 sites. NI has 360 Areas of Special Scientific Interest (ASSIs), defined as being NI's very best wildlife and geological sites, as well as eight National Nature Reserves and one Marine Nature Reserve at Strangford Lough. Under the draft NI Marine Bill, Strangford Lough will be re-designated and become NI's first Marine Conservation Zone (MCZ).
- NI has a special responsibility as it is at the western edge of the range of European habitats and species. Peatland, in the form of upland blanket bogs (10% of NI's land cover) and lowland raised bogs, is particularly well represented, as are montane heath and fen. NI's seas support around half of its wildlife, including many threatened marine animal and plant species, some of which are found nowhere else in the world. Species of particular importance in NI include the Irish Hare (*Lepus timidus hibernicus*), Chough (*Pyrrhocorax pyrrhocorax*), Curlew (*Numenius arquata*) and Red Squirrel (*Sciurus vulgaris*). NI also has the highest density of hedgerows in the UK (though they are generally newer, having been planted between 1750 and 1850).

- As revealed in Ireland's 2002 National Biodiversity Plan, about 10% of the country is considered to be of prime importance for nature conservation and is included in the protected areas programme. Designated sites at national level and above comprise 423 SACs (130 with marine components), 121 SPAs (100 with marine components), 25 proposed SPAs and 45 Ramsar sites, as well as numerous Natural Heritage Areas (NHA; the equivalent of ASSIs in NI or SSSIs in Scotland).
- Ireland's marine environment is particularly biodiverse and is among Europe's richest for cetaceans (whales, dolphins and porpoises). It supports large seabird breeding colonies, a great range of invertebrate species, and its cold-water coral communities are of particular note, supporting a diverse array of associated fauna. Ireland's aquatic systems and wetlands support internationally significant populations of birds, fish and invertebrates. In addition, Ireland has a significant number of internationally important habitats including limestone pavements, machair, turloughs and active peatlands, whilst the country is relatively rich in bryophytes, algae and lichens.
- The west coast of Ireland has a rich and diverse natural heritage, with a wealth of Natura 2000 designations, particularly in the Border County of Donegal. Due to proportionately less development and intensive agricultural activities having occurred in the Border Region compared with much of the rest of Ireland, its natural heritage is largely unspoilt. The Border Region also contains a wealth of freshwater habitats with stocks of game and course fish.
- Protected areas in Scotland represent around 20% of the total land area and comprise 239 SACs (46 with marine components), 153 SPAs (45 with marine components), 51 Ramsar sites, 47 National Nature Reserves and 1,453 SSSIs. The Marine (Scotland) Act and Marine and Coastal Access Act delivered new powers to protect other habitats and species of national and international importance

through the designation of Marine Protected Areas (33 MPAs are currently proposed, with a further 4 at the search location stage).

- Scotland has a distinctive biodiversity with about 90,000 species recorded on its land and sea. Scotland's biodiversity has unique assemblages of species, including Atlantic and montane floras, and fungal communities reflecting combinations of boreal, Arctic-alpine, oceanic and Lusitanian elements. Similar distinctive patterns are found in bryophytes, lichens and birds. The seas around Scotland are among the richest in Europe for marine mammals (holding approximately 74% of Europe's population of grey seals and 24% of common seals) and are also home to 45% of Europe's breeding seabirds.
- As revealed by SNH in March 2013, the proportion of natural features in favourable condition on protected sites in Scotland was 66.2%, with a further 11.9% classed as recovering. The proportion of features in favourable condition has increased by 6.7% between 2005 and 2013, largely due to improved land management and grazing regimes on upland sites.
- Measures taken to ensure coherence of the Natura 2000 Network during 2007-2013 (set out in the JNCC's Article 17 Consultation Draft) in NI included: integration with other measures for example Agri-environment schemes; a biodiversity research programme aimed at understanding the status and management needs of priority habitats and species; and Habitat and Species Action Plans. In Scotland, measures included: creation of guidance documents by SNH on habitat networks in policy and legislation; and implementation of various initiatives including the Central Scotland Green Network, the Scotland Forest Habitat Network and the Scottish Integrated Habitat Network map viewer.
- Two schemes were launched in Ireland in 2010 to promote biodiversity, improve water quality and combat climate change - the Agri-Environmental Options Scheme and the Natura 2000 Scheme. During 2006-2010, 658 National Parks and Wildlife

Service (NPWS) farm plans were approved including specifically targeted measures towards the conservation and enhancement of suitable ecological conditions for various bird species including hen harriers and corncrakes.

Weaknesses and Threats

- The Northern Ireland Countryside Survey (NICS) carried out in 2007 revealed continued loss of semi-natural habitat by agricultural conversion and building. This is a particular concern in lowland landscapes, where semi-natural habitats are already small and fragmented. The areal extent of many of Scotland's habitats has declined since the 1940s; semi-natural grassland covers just 0.25% of Scotland's land area.
- Nitrogen deposition (mainly a result of ammonia emissions from agriculture) is a significant issue for sensitive habitats in NI as background levels are already higher than the critical loads for some habitats.
- A significant proportion of NI's habitats and species are in unfavourable condition. The Natura 2000 Prioritised Action Framework revealed that 31% of ASSI habitat features and 22% of species features are classed as unfavourable, with only an additional 3% of habitat features found to be recovering. The situation is worse in RoI where only 7% of habitats and 39% of species listed under the Habitats Directive are considered to be in a favourable state; forests, peatlands, grasslands, freshwater habitats, dunes, fish, molluscs and the natterjack toad are faring particularly badly. The condition of Scotland's species and habitat features in 2013 is much better at 75% favourable in both cases (though condition of the following could benefit from improvement: grassland, heath, woodland, amphibians and marine mammals).
- Bird populations are considered to be a good indicator of the broad state of the wildlife and the countryside; NI's wetland bird population decreased by a substantial 23% between 1994/95 and 2010/11. Approximately 50% of NI's honeybees were lost in 2008 due to

colony collapse disorder, whilst half of the 100 bumble bee and solitary bee species present on the island of Ireland are also in decline due to habitat loss/fragmentation, pests/diseases and climate change.

- The key pressures on Ireland's habitats and species, as revealed in the EPA's 2012 Environment report, are: direct habitat damage such as peat cutting, wetland drainage/reclamation and infrastructure development; overgrazing and undergrazing; water pollution particularly from nutrients and silt; unsustainable exploitation such as over-fishing and peat extraction; invasive alien species; and recreational pressure. In 2010 the EC began infringement proceedings against Ireland in relation to continued turf cutting on bogs designated as SACs.
- Some habitats in Scotland have declined in both area and condition (e.g. hedgerows and marsh and swamp), whilst biodiversity has shown both declines and increases. Overgrazing and invasive species are the main challenges to conditions of protected sites improving from unfavourable to favourable. For sea bird populations the reasons for unfavourable condition are usually related to a combination of influences, including climate change and interaction with fisheries.
- Few protected nature conservation sites have management plans or detailed mapping of habitats, suggesting a lack of co-ordinated / forward-thinking management across the Natura 2000 network in NI and RoI.
- There are 630 proposed Natural Heritage Areas (pNHAs) in Ireland, comprising 65,000 ha, which were published on a non-statutory basis in 1995 but have not since been statutorily proposed or designated and therefore currently receive limited protection.
- The focus of conservation policy in the INTERREG territories is mainly on protecting and managing high-value habitats. Intermediate-value habitats, which contain much of the species diversity in the countryside and provide ecosystem services

including food, materials, water, flood control and carbon storage are only protected through good agricultural and environmental condition (GAEC) standards (part of Cross Compliance requirements for those in receipt of Single Payment Schemes) and through the Environmental Impact Assessment Regulations. They are thus more vulnerable to land use change, disturbance and pollution.

- As revealed by DARD, abandonment of upland farms due to an aging farming demographic is resulting in landscape dereliction and loss of habitat quality for those habitats that are dependent on farming. Eutrophication of water bodies caused by e.g. polluted run-off from farms is also affecting habitats and species.
- Increased movement of biological materials around the world for trade is leading to introduction of new pests and diseases such as *Phytophthora* spp, whilst invasive species are affecting rural land, for example willow coppice used for biomass. This trend will continue with the changing climate.
- Defra's 2010 assessment of the UK's seas revealed that the following elements of NI's marine environment are experiencing many problems and/or a trend of deterioration: intertidal rock; intertidal, shallow subtidal and shelf subtidal sediments; commercial fish stocks; estuarine fish; and seabirds (Atlantic area only). In Ireland, some of the pressing issues in the area of the marine environment are the loss of marine biodiversity, marine litter, the risks from overfishing and acidification.
- The seas around Scotland are potentially among the most biologically productive seas anywhere in the world, but many marine habitats are of bad and deteriorating status. Damage is being caused by climate change, human activities including fishing practices, pollution and infrastructure development.

Socio-Economics

Strengths and Opportunities

- Rural areas exhibit a strong sense of community and local identity with a strong and well developed community infrastructure. The rural economy is based primarily on the SME sector with a variety of strong indigenous businesses.
- NI has access to a broad range of world class telecommunication services. In 2005 NI became the first region in Europe to have 100% access to first generation broadband (512kbps). There is an opportunity to improve broadband speed however, as NI is now lagging behind other nations, with availability of fast broadband being particularly patchy.
- Ireland has significant strengths in research, technology, development and innovation and a growing international industry base centred around ICT and life sciences. These, coupled with an indigenous strength in marine science and technology, provide the means to enable smart, knowledge-based enterprises to target globally traded products and services in existing and new markets.
- In recent years there has been significant investment in upgrading the Border Region of Ireland's infrastructure and the regional economy has experienced steady growth. This recent economic development has been assisted by the presence of a highly educated, skilled and entrepreneurial workforce.
- European member states with an Atlantic coastline are best placed to significantly boost the 'blue economy' through emerging sectors, such as offshore renewable energy, but also through revitalising traditional maritime industries.
- Research findings by Bullock et al. in 2008 on the economic and social benefits of biodiversity in Ireland indicate a marginal value of at least €2.6 billion per annum; whilst in 2007 Ireland's sea related industries and services contributed €2.4 billion to its economy. The Irish Government intends to increase the turnover from its ocean economy to €6.4 billion by 2020. Research by Fitzpatrick Associates in 2005 estimated the direct economic impact of forest recreation by Irish residents to be €268 million, while the non-

market value of forest recreation was estimated at €97 million. A study by Ecorys found that Ireland's historic environment is estimated to account for €1.5 billion annually to GVA, with almost half of this coming through tourism.

- The benefits generated by Scotland's proposed Marine Protected Areas would mostly accrue to services dependent on healthy and productive seas, such as fisheries, ecotourism, and recreational activities. The 2013 document 'Planning Scotland's Seas' estimates the value of these benefits at £239–583 million over 20 years. Nature-based tourism in Scotland is estimated to provide about £1.4 billion in income, with about 39,000 full-time equivalent jobs.

Weaknesses and Threats

- NI remains one of the most economically deprived regions of the UK, with a tendency for more deprived areas to the west, north and south and in Belfast. In 2010/2011, 20% of the NI population was in relative poverty (the UK average was 17%) and 13% in absolute poverty (9% for the UK). In Scotland the proportion of individuals living in relative poverty has fallen from 21% in 1994/95 to 15% in 2010/11. The consistent poverty rate in RoI in 2010 was 6.2%.
- NI continues to have the highest economic inactivity rate of all 12 UK regions, and equal lowest for the employment rate; in 2013, 27.4% of those aged 16-64 were economically inactive (compared to the UK average of 22.4%) whilst the employment rate was estimated at 66.6% (compared to the UK average of 71.4%). NI also has a much larger share of persons in long term unemployment (44.3%) in comparison with the UK average (33.5%).
- In Ireland and Scotland, the employment rates over the period July-September 2012 were 59% and 70.6% respectively (the UK average was 71.2%); in the Border Region of Ireland the rate was just 53.3%, and it was 67.6% in Western Scotland. In 2011, RoI had the largest share of unemployed persons in long term

unemployment (59.4%); significantly higher than the EU27 average of 43.1%. The long term unemployed accounted for almost 30% of Scottish claimants in November 2012. Inactivity in Western Scotland in June 2012 stood at 24.7%, which was above the Scottish average of 23.7%.

- 18% of people of working age in NI still have no formal level of education; this is twice that of the UK average and the highest of all UK regions. By contrast, the 2011 figure for the Border Region of Ireland was 3.8%, and for Scotland in 2010 the rate was 2.6%. In addition, 78% of NI farm operators surveyed in 2008 had no formal agricultural qualification (though those working on larger, full time farms tended to have higher qualifications and this is reflected in the return received). DARD's SWOT analysis also found a lack of environmental knowledge transfer and innovation in NI agriculture.
- There are particular problems of fair and equitable access to services and public transport frequency and connectivity for rural dwellers throughout NI, which has subsequent impacts on vulnerable groups such as low income households, the elderly, children and young people, and those with disabilities.
- NI is still suffering from bombings, shootings, punishment attacks, sectarian incidents, terrorist attacks and the threat of dissidence.
- The 2013 study by Kelly *et al.* has estimated the annual cost of invasive species to the economies of NI and RoI to be £46.5 million and £161 million respectively. A similar study for Great Britain undertaken by Williams *et al.* in 2010 estimated the annual cost in Scotland to be £245 million.
- Ireland's Integrated Marine Plan states that between 3% and 5% of Europe's GDP (and 4.2% of the UK's GDP) was generated from its marine economy in 2007; yet despite its substantial coastline and marine resources (RoI has one of Europe's largest sea to land ratios at over 10:1), Ireland's marine economy contributed only 1.2% to its GDP in 2007.

- The development of the Border Region of Ireland is challenged by some difficult socio economic and physical barriers. The Region has little natural geographic or economic cohesiveness or identity and it has always been characterised by peripherality and disadvantage. The distortion effect created by strong urban centres close to the border in NI has also impeded development. Persistent weaknesses in infrastructure have undermined the ability of the Region to compete for employment on a national or international scale.

Health and Quality of Life

Strengths and Opportunities

- NI's staffing levels for hospital and community health services per head of population still compare favourably with the rest of the UK; 2011 data suggests that hospital activity per staff member is 19% lower than the UK average. Health services are also favourable in RoI, with 1006.7 hospital beds per 100,000 of the population compared to the EU25 average of 639.1.
- In terms of information technology capacity, comparative data from a survey of GPs in 2006 indicated that NI surgeries were better equipped than in the rest of the UK.
- There is less disparity in life expectancy between the most and least deprived areas of NI compared to the rest of the UK.
- The majority of Scotland's cities and towns are generally good places to live, with 93.7% of people rating their neighbourhood as fairly good or very good (as revealed in the 2012 Scottish Household Survey).
- The 2012 Scottish Household Survey also revealed that 71% of adults in Scotland have access to a useable local greenspace that is within a six minute walk from their home.

Weaknesses and Threats

- NI has the highest level of fuel poverty (defined as when a household has to pay more than ten per cent of its income to

maintain an acceptable level of temperature in the home) of any UK region (44% in 2011 compared to a UK average of 24%). According to the NI Consumer Council, 50% of people in fuel poverty are aged over 60 and 42% of households in fuel poverty include children; these are particularly high risk groups. The level of fuel poverty in Scotland is 28% (2010).

- Since 2003, infant mortality has been higher in NI than in the rest of the UK, whilst the UK has higher rates than much of Europe.
- Scotland's overall health profile has continued to lag behind England's, and there are particular disparities in life expectancy and mortality rates between the most and least deprived areas of Scotland, with Western areas (especially Glasgow) faring the worst.
- Obesity (largely determined by modifiable lifestyle behaviours such as low physical activity levels, sedentary behaviour and consumption of energy dense diets) continues to be one of the most important public health challenges facing the UK and Ireland, with significantly higher rates than the rest of Europe. In 2012, 61% of adults in NI were classed as overweight or obese, and 24% as obese. 2011 figures for RoI were similar, at 61% and 25% respectively. Scotland fares particularly badly, with 63.3% of adults classed as overweight or obese in 2010 and 27.4% as obese.
- Physical activity is also poor; the proportion of people meeting the government's recommended 30 minutes a day in NI is less than one in two for men and just one in three for women, though these are better than the UK average. Access to woodland for exercise, mental health and educational purposes in NI is below its full potential.
- There are still quality of life issues in some deprived areas of Scotland, related to population pressures, employment opportunities and a legacy of poor housing and inadequate infrastructure and amenities.

Soil and Land Use

Strengths and Opportunities

- NI has significant natural resources such as carbon rich peaty soils (NI's soils have an average carbon content of 5% compared to 2-3% in the rest of the UK) and high quality grassland cover available to capture carbon. Scotland supports the majority of the UK's peatland soils and the bulk of the UK's internationally important peat bog habitat. Blanket bog is one of the most extensive semi-natural habitats in Scotland, covering some 1.8 million hectares (23% of total land area). Ireland is of international importance for peatlands (which cover around one-fifth of land area) and holds 8% of the world's blanket bog.
- Soil quality in NI has improved slightly in recent years and degradation is low compared with the rest of the UK. In 2010/11, there were fewer soils that were either under or over-enriched with phosphorus compared to 2005/06. Soil in RoI is also considered to be in good condition and is relatively rich in soil organic matter, especially wetter soils and blanket and basin peats. Scottish soils are generally of good quality and only a few soils have high levels of contamination.
- The island of Ireland is, for its size, one of the most geologically diverse regions in the world and has substantial mineral deposits. NI sites such as caves at Marble Arch, white cliffs on the Antrim Coast, the Giant's Causeway, Slieve Gullion and the mountains of Mourne have particular historical, educational, recreational, tourism and landscape value.
- The area under forestry in RoI has increased from 7% to 11% of national land cover during 1990-2010, though this is still significantly below the European average of 35%.
- Timber and a wider variety of timber products are obtained from Scotland's forest ecosystems. Softwood makes up more than 99% of the wood harvest; about 44% of Great Britain's softwood

production is managed by sawmills in Scotland. Non-timber forest products are also important in Scotland with about 300 species used.

Weaknesses and Threats

- The Northern Ireland Countryside Survey (NICS) carried out in 2007 revealed a large increase in the area of agricultural grassland lost to rural building (almost twice that reported by NICS in 1998).
- Woodland is not seen as an economically viable use of land by NI's farmers, and thus the small wood industry (e.g. charcoal, timber and woodfuel) is far less developed than in the rest of the UK. NI woodlands are typically unmanaged, inaccessible, small and fragmented, whilst woodland creation rates are declining.
- The EPA study on sustainable management of peatland in Ireland (Renou-Wilson et al. 2011) found that up to 95% of Ireland's peatland exists in a degraded state and continues to be disturbed by domestic and industrial peat extraction, afforestation (much of Ireland's new forest is coniferous plantations planted on peatland and pasture lands), wind farms, recreational activities and invasive species. Hedgerows in Ireland have also suffered significant losses and current legal controls for their protection are limited.
- There is some evidence that levels of organic matter in Scottish soils may be declining, whilst soil erosion associated with buildings and roads is a continuing problem.

Water

Strengths and Opportunities

- The chemical quality of NI's rivers has improved over the last decade; industrial discharge quality has improved in recent years; whilst drinking water quality remains at the highest level of compliance since 2004, at 99.8%.
- Groundwater is currently of a high quality, with 65 of NI's 67 groundwater bodies at "good" status following Water Framework Directive (WFD) quantitative and qualitative classification. Almost

90% of marine water bodies around NI's shores are classified as high or good environmental status (under the Marine Strategy Framework Directive), with the remainder classified as moderate.

- Water quality in Ireland compares favourably with that in other EU countries (typically ranking in the top third of the 30+ assessed), with currently 71% of rivers, 46.6% of lakes, 46% of transitional and coastal waters and 85.6% of the area of groundwater aquifers being at “high” or “good” status. Measures to reduce pollution have been successfully implemented through the Water Services Investment Programme, the Nitrates Action Programme and River Basin Management Plans.
- The Border Region of Ireland is the source of Rol's two longest rivers, the Shannon and the Erne, which have been connected to form the 300km Shannon Erne waterway, one of the worlds largest waterways.
- Water quality in Scotland is generally good and improving due to a reduction in end-of-pipe discharges, whilst there have been major improvements in the quality of bathing, shellfish and freshwater fish waters. Some 54% of rivers, 61% of surface water bodies, 86% of estuaries and 97% of coastal waters in Scotland are classified as either “high” or “good” quality as of 2011.
- Water storage in intact peatlands can contribute to flood alleviation.

Weaknesses and Threats

- In 2011, only 23% of river waterbodies in NI were classed as having “good” overall ecological quality, and there has been no improvement in recent years. The proportion needs to increase to 72% by 2015 if NI is to meet the requirement of the WFD.
- Historically, manure management practice, particularly timing of manure spreading, and over application of chemical fertilisers containing phosphorus had caused pollution of many of NI's lakes and rivers. However a series of actions including the Nitrates

Action Programme Regulations, capital grant schemes and advisory support have been implemented since 2006 to address this. There remains evidence of ammonia, a common agricultural pollutant, causing negative impact on Natura 2000 and ASSI designated sites.

- Much of NI is low-lying and many rivers and streams have gentle gradients in their lower reaches. With lowland soils that are mostly clay rich and of low permeability there is widespread potential for localised flooding, a situation reflected in the Region's long history of arterial land drainage. Localised flood events caused by intense and/or prolonged rainfall and local conditions have been experienced across the Region with increasing frequency. In addition, Strabane, Omagh, Castlederg and Newcastle have all suffered from river flooding in recent years, whilst estuarine flooding or coastal inundation has occurred on the Roe at Limavady, on the Lagan at Belfast, and at Portrush, Rostrevor and Newtownards.
- In RoI, the bulk of poor-status groundwater bodies (particularly in the Western and Shannon river basin districts) are in areas with excessive phosphate due to eutrophication from diffuse sources, whilst there has been an increase in the length of rivers affected by slight to moderate pollution from eutrophication during 1987-2011. Approximately half of the 953 polluted river sites assessed by the EPA in 2010 were polluted due to large point sources such as municipal wastewater treatment plants and the other half due mainly to diffuse agricultural sources. Damage to peatland in RoI has also impacted on water quality due to silt release from mechanical peat harvesting, increased nutrient release from drained bogs and increased acidification from afforestation on bogs.
- There are some concerns regarding hazardous substances, beach litter, and the microbiological quality of bathing waters and shellfish growing waters in the Irish Sea.

- Diffuse pollution (e.g. from farmland and roads) is the greatest threat to water quality in Scotland.
- Less summer rainfall, as predicted for the future by the 2012 UK Climate Change Risk Assessment, may lead to a reduction in river flows, affecting public water supplies and increasing the risk of water pollution.

Air Quality

Strengths and Opportunities

- Air quality monitoring in NI shows that standards for key pollutants, sulphur dioxide (SO₂), lead, and particulate matter (PM₁₀) were met at the key automatic monitoring sites in 2011. Ammonia emissions from agriculture have reduced slightly (by 6%) during 2001-2011.
- Air quality in Ireland is of a high standard across the country and is among the best in Europe, meeting all EU air quality standards in 2010 as well as emission ceilings for SO₂, volatile organic compounds and ammonia.
- Air quality is generally better in Scotland than elsewhere in the UK. Trends in pollutants monitored in Scotland reveal a long-term decline in NO₂ concentrations in urban areas (between 1986 and 2010), and a decline in PM₁₀ up until 2004 followed by a rise and fall to 2009 (now below the annual mean objective).

Weaknesses and Threats

- Though performing better than much of the rest of the UK and Europe, in 2011, three urban monitoring sites in NI failed to meet standards for nitrogen dioxide (NO₂), whilst average levels of NO₂ have not declined over the past decade. All three sites where polycyclic aromatic hydrocarbons (PAH) are monitored exceeded objectives in 2011 due to the domestic burning of bituminous coal (where natural gas is unavailable).
- Twelve of the 26 Local Authorities in NI have declared AQMAs, for NO₂ and/or PM₁₀ which are primarily due to road transport

(domestic heating is the cause in Ballymena and Strabane).

Access to public transport services in rural areas is poor, leading to a high dependency on cars.

- In RoI, levels of NO₂ are close to the specified EU limit values for air quality in traffic-impacted areas of Dublin and Cork; it is one of the 11 EU Member States that did not meet their 2010 emission ceiling for NO_x. Levels of NO_x in traffic-impacted city centre areas will likely continue to be a problem due to the difficulty in achieving large-scale reductions in road traffic numbers. Ireland also faces future challenges to meet new air quality standards for PM_{2.5} concentrations by 2020.
- Levels of some pollutants still exceed air quality objectives in Scotland, particularly in the main centres of population in the central belt. In 2011, 13 of Scotland's 32 local authorities had declared AQMAs; there are now 30 AQMAs in total declared mainly for NO₂ and PM₁₀ from road transport.
- Air pollution emissions from agricultural activities (in particular, ammonia from manure handling/storage and spreading) represent a significant pressure on sensitive habitats/ASSIs/SACs (as well as SPAs/Ramsars) in NI due to eutrophication effects. Nitrogen deposition and exceedance of nutrient nitrogen is also problematic in RoI with little change since 1990.

Climate Change

Strengths and Opportunities

- NI's total greenhouse gas (GHG) emissions have reduced by 17.5% since 1990 whilst carbon dioxide (CO₂) emissions (which accounted for 69.1% of all GHG emissions in NI in 2011) have reduced by 16%. In 2011/12, 14.3% of electricity in NI was produced from indigenous renewable sources, up from 1.5% in 2001/02.
- Ireland is on track to meet its Kyoto greenhouse gas (GHG) emissions target for the 2008–2012 period. The share of electricity

generated from renewable energy sources in 2010 was 14.8%, exceeding the interim EU target of 13.2% and almost meeting the Government target of 15%.

- In Scotland, total GHG emissions and CO₂ emissions have reduced by 23.7% and 18.8% respectively since 1990.
- Significant natural resources are potentially available for renewable energy generation in NI, including offshore wind to the north and off the east coast, tidal energy within Strangford Narrows, around the Copeland Islands and Rathlin Island and off the northeast coast between Fair Head and Runaby Head, and wave energy off the north coast. Research undertaken by DETI identified that NI has a number of relatively strong growth sectors which offer significant possibilities with regard to developing low carbon technologies.
- Many of Scotland's land, freshwater and marine environments provide the most suitable conditions in the UK for provision of renewable energy. Topographically, Scotland is better suited to hydropower (which it has been successfully generating for over a century), though the country also has remarkable capacity for generation of renewable energy from land and marine-based wind power, and from wave and tidal sources.
- NI's peat has high carbon content, and bogland vegetation sequesters carbon and represents a substantial carbon store, especially where the hydrology of pristine sites is maintained and that of degraded sites restored. NI's perennial grassland is also a valuable carbon store.
- Scotland has abundant peat and organic-rich soils estimated to store 1,620 megatonnes (Mt) of carbon. The marine ecosystem also exerts a significant climate regulating effect on Scotland's land areas.

Weaknesses and Threats

- GHG emissions are not falling as quickly in NI or Scotland as in the rest of the UK; a decrease of 29% on 1990 levels has been recorded for the UK as a whole.
- Total GHG emissions from the transport sector in NI have increased by 25% during 1990-2011 despite improvements in efficiency of transport vehicles. This is a noticeably larger increase than for the UK as a whole. GHG emissions from land use change in NI have increased by 83% during 1990-2011 (though still represents less than 1% of the country's total emissions).
- Ireland's per capita aggregate GHG emissions are the second highest in the EU, though its CO₂ emissions per capita are the 10th highest. This reflects the fact that methane and nitrous oxide from agriculture make up a significant proportion of total emissions in Ireland (30.5% - the highest rate in Europe), and are projected to increase in the period to 2020 due to agricultural expansion under the Food Harvest 2020 strategy.
- The proportion of people driving to work in the Border Region of Ireland is the highest of all RoI regions, whilst the proportions walking or cycling to work and using public transport in the Border Region are also below the national average.
- Natural peatland acts as a long term carbon store; however, when peatland is damaged this function is reversed and carbon is released to the environment. The EPA's 2011 study on Ireland's peatland estimated that due to extensive degradation, Irish peatland releases carbon at the rate of 9.66 Mt CO₂ equivalents per year.
- Since the mid-1990s, Ireland's population growth has been significantly greater than the EU average, resulting in greater demands on fossil-fuel-based energy for heating and electricity. The transport sector is also a significant contributor to GHG in RoI; emissions rose 127% over the period 1990-2007, but have fallen by 20% since then.

- Agriculture is highly susceptible to disruption due to climate change and extreme weather events such as prolonged periods of rainfall, drought and snow, whilst flood risk is also of particular concern for infrastructure (e.g. roads, railways, sewage treatment works, electricity substations and hospitals).
- Changing climatic conditions may increase the threat from pests and diseases (particularly in forest environments), as well as from invasive non-native species.
- Warming since the mid-1980s has been more pronounced in the seas surrounding NI (and RoI) compared to other areas of the UK. The average sea level around the UK coast rose by about 14cm during the 20th century, whilst ocean acidity is increasing as carbon dioxide is absorbed.
- Homogenous and fragmented landscapes created by intensive farming will restrict the ability of people and wildlife to adapt to climate change.

Material Assets

Strengths and Opportunities

- The INTERREG territories have significant natural resources such as water, carbon rich soils and high quality grassland, whilst natural resources are also available for renewable energy generation.
- NI is underlain by extensive deposits of economically valuable minerals (e.g. salt which is exported to Ireland, the UK and the USA). Civil unrest over the past three decades means that much of NI's mineral resources have yet to be extracted.
- The Low Carboniferous carbonate rocks of the Irish Midland are host to one of the great orefields of the world. Ireland is ranked first in the world for zinc discovered per square kilometre and second with respect to lead.
- There are a wide range of geological resources available for energy, construction and manufacturing in Scotland's land and

seas. These include coal, oil and gas; metallic and other industrial minerals; igneous rock, sandstone, limestone and dolomite; and sand and gravel. Scotland's forest resource in particular is a vital component of climate change mitigation and underpins the value-added forest industries and wood fuel sector.

- The proportion of waste sent to landfill in NI has declined from 90% in 2002 to 56.7% in 2011/12, whilst the total amount of local authority collected (LAC) municipal waste arising declined by 7.2% over this period. In 2011/12, almost 40% of household waste and over 38% of LAC municipal waste was sent for recycling.
- In 2010, municipal waste generated in RoI was 16% less than in 2007, whilst household waste generated per person is considerably lower than the EU average; this is largely due to the economic downturn however. Ireland has achieved its EU waste recycling and recovery targets for waste packaging; waste electrical and electronic equipment; and household waste paper, metals, plastic and glass. RoI has also achieved the first target for diversion of biodegradable waste from landfill as required under the EU Landfill Directive.
- Scotland (along with Wales) has the most ambitious waste targets in the UK – by 2025, 70% of all waste will be recycled and a maximum 5% of waste sent to landfill. Between 2000/01 and 2011/2012 the amount of municipal solid waste arising in Scotland decreased by 5%, with the fall since the 2006/07 peak of 3.44 million tonnes at 11%.

Weaknesses and Threats

- Domestic material consumption (defined by the EC as the annual quantity of raw materials extracted from the domestic territory, plus all physical imports minus all physical exports) in Ireland peaked in 2007 at over 50 tonnes per person compared to an EU average of 16 tonnes per person; however this has fallen in recent years due to the contracting economy.

- NI has the lowest recycling rates of Local Authority collected municipal waste in the UK, at 38.4% in 2011/12 (rates for electronics, textiles, plastics and food are particularly low); Ireland's rate is lower still. Scotland fares better (in 2011/12 Scotland recycled 41.2% of its municipal solid waste) but this is still below the EU average (in 2010) of 42%. EU Member States are required to recycle 50% of municipal solid waste by 2020.
- There is a continued reliance on landfill in RoI – 58% in 2010 (the figure is similar for NI, and slightly lower for Scotland, at 55% in 2011/12). Consequently 15 of Ireland's 28 operational municipal landfills will run out of consented capacity in three years, and there is only 12 years gross municipal landfill disposal capacity in the State. Ireland has failed to meet the EU re-use and recovery targets for end-of-life vehicles, and continues to export nearly half of its hazardous waste for treatment/disposal.

Cultural Heritage

Strengths and Opportunities

- NI has a rich cultural heritage of archaeological sites, monuments and buildings (totalling more than 35,000) providing evidence of settlement, agricultural, industrial and ritual activity from 9,000 years ago. These are either protected by law (statutory) or through the planning system (non-statutory). NI has a total of 190 single, groups or complexes of sites and monuments in state care; representing some of the premier examples of monument types in NI, these are subject to an ongoing conservation programme.
- The rural, largely undeveloped nature of NI has helped preserve its archaeological sites and built heritage better than in other countries.
- NI's centralised heritage recording system has created a unified, standardised and advanced baseline data set, in particular for industrial heritage, post-medieval/modern defence heritage, Listed

Buildings and non-listed buildings of historical interest (e.g. compared to the RoI).

- There are two properties in RoI inscribed on the World Heritage List: the Archaeological Ensemble of the Bend of Boyne (Europe's largest and most important concentration of prehistoric megalithic art, falling partly within the Border Region) and Sceilg Mhichil (an early monastic complex on a difficult to access, steep rocky island off the southwest coast).
- The Irish Record of Monument and Places (RMP) is a statutory list of all known archaeological monuments, comprising over 120,000; these all have legal protection. Of these, 741 are National Monuments under state care listed by Heritage Ireland, comprising individual or groups of monuments ranging in age from the Neolithic period to the 20th Century.
- Scotland currently has five World Heritage Sites: the Heart of Neolithic Orkney; St Kilda; New Lanark; The Antonine Wall; and The Old and New Towns of Edinburgh. None of these are located in the area covered by the INTERREG V Programme.
- Scotland has over 260,000 archaeological sites and monuments, architectural objects and marine sites, of which around 8,000 of the most important are scheduled, and 325 are in State Care. The oldest scheduled monuments date from 8,000 years ago and the most recent include Second World War sites. Scotland's historic environment attracts millions of visitors each year and generates income and jobs.

Weaknesses and Threats

- There is a lack of coordination across the rural tourism sector, with many opportunities for sharing and promoting NI's exceptional cultural heritage being missed.
- Cultural heritage may be at risk from coastal flooding and erosion related to a changing climate. Other pressures include development, changing land use, agricultural practices,

vandalism/theft, renewable energy, funding, visitors, skills, materials and maintenance.

- Enforcement of heritage legislation and planning policy in NI is under resourced and not always carried out, whilst there is a lack of awareness and inherent difficulties in identifying some forms of cultural heritage.
- There is a lack of coordination and co-operation between the cultural heritage recording systems of NI and RoI.
- Intangible culture, defined by UNESCO as *“the practices, representations, expressions, knowledge, skills – as well as the instruments, objects, artefacts and cultural spaces associated therewith – that communities, groups and, in some cases, individuals recognize as part of their cultural heritage”* is under threat from sectarianism and racism amongst communities throughout NI and the Border Region (as reported in the Draft Operational Programme for PEACE IV).

Landscape

Strengths and Opportunities

- The Giant's Causeway, located on NI's Antrim coast and renowned for its polygonal columns of layered basalt resulting from a volcanic eruption 60 million years ago, is a UNESCO World Heritage Site (natural landscape designation). There are eight areas designated as Areas of Outstanding Natural Beauty (AONB) in NI, making up 22% of its total land area.
- Major rural tourism attractions in NI include the Giant's Causeway, the Mourne Mountains and the Glens of Antrim, whilst the Antrim coast is considered to be of very high seascape value, particularly along the Causeway Coast. The NI chapter of the UK National Ecosystem Assessment stated that in 2007, 26% of total tourist spend in NI was from trips to The Causeway Coast and Glens.
- There are six areas in the RoI that have been designated as National Parks due to the national importance of the landscape

(none of these are located in the Border Region). The landscapes of these protected areas vary dramatically, from the Burren's shattered limestone rock garden to Killarney's shimmering lakes and exquisite natural woodland.

- The Border Region has been described by the Border Regional Authority as a "...region of outstanding natural beauty...The area is uncrowned and unspoilt with highlands, drumlins and spectacular views over the wild Atlantic Ocean and the Irish Sea." The varied rural landscape and natural assets of the Border Region make it an ideal location for outdoor pursuits, including fishing, water sports and walking.
- Scotland has two National Parks; the Cairngorms and Loch Lomond & the Trossachs (the latter falls partly within the area covered by the INTERREG V Programme). Scotland also has 40 National Scenic Areas (NSAs, the equivalent of AONBs), covering 13% of the land area and representing some of the best examples of Scotland's lochs and mountains. Ten of these are located within Western Scotland, the largest of which being North Arran, Jura and Knapdale (all over 20,000 ha).
- The landscapes and seascapes of Scotland are distinctive and contribute to Scotland's brand, nationally and internationally. Habitats and landscapes provide opportunities for recreation and tourism and are well used by the Scottish population and by visitors. Scotland's landscapes are also of high aesthetic and inspirational value.
- In 2011 Scotland produced a Land Use Strategy, the first of its kind in Europe. The strategy's objectives are: land based businesses working with nature to contribute more to Scotland's prosperity; responsible stewardship of Scotland's natural resources delivering more benefits to Scotland's people; and urban and rural communities better connected to the land, with more people enjoying the land and positively influencing land use.

Weaknesses and Threats

- There is a lack of coordination across the rural tourism sector, with many opportunities for sharing and promoting NI's exceptional landscapes being missed.
- Landscapes in NI and RoI have been affected by rural development, including housing and infrastructure, as well as agricultural intensification.
- Key issues for Scotland's landscape include poor standards of design, attrition of undeveloped, remote and wild countryside and coasts, loss of rural landscape features, and decline and loss of natural and cultural features.

Green Infrastructure and Ecosystem Services

2.3.4. This section looks at the inter-relationship between the preceding sustainability topics, as well as green infrastructure (GI) and ecosystem services (ES) which are cross-cutting topics of increasing importance. It also includes information on other cross-cutting themes such as tourism and environmental knowledge and understanding. The purpose of this section is to link environmental, social and economic issues in a more integrated way, and emphasise that a good quality environment is essential to continuing social and economic prosperity.

Strengths and Opportunities

- The UK National Ecosystem Assessment (NEA) revealed values that have been placed on some of the ES that NI currently provides. Provisioning services include livestock, dairy and poultry products (which together accounted for £1.14 billion of output in 2008); arable products (£126 million); marine fisheries (£25 million); aquaculture (£11 million); forest products (£7 million); and drinking water (£186 million). Cultural services include tourism (£1.5 billion); and coarse, game and sea/shore angling (£43.5 million). Valued regulating services include apple pollination (£7 million), whilst the supporting service of water quality was valued at £8 million. The report further revealed that a 2006 study estimated

that the natural environment contributed £573 million to the NI economy.

- The EC has described the Atlantic area as Europe's largest and most important ecosystem. The NI coast in particular (which borders the Atlantic Ocean to the north and the Irish Sea to the east) has highly productive and biologically diverse ecosystems with features that serve as critical natural defences against storms, floods and erosion. The majority of NI's 650 km of coastline is also protected for its nature conservation interest.
- NI's grassland and peatland are excellent carbon stores, whilst the extensive hedgerow networks across NI provide connectivity through the landscape whilst helping to keep levels of soil erosion lower than in other UK countries. The social use of both state and non-state woodland in NI is increasing. In Scotland, 61% of woodland is publicly accessible, with 15% of the population able to access a 2ha+ woodland site within 500m of their home, and 54% with access to a 20ha+ site within 4km.
- NI's ecological, carbon and greenhouse gas footprints are slightly lower than the UK per capita average.
- As reported on the website of Teagasc (the agriculture and food development authority in Ireland), the agri-food sector in Ireland currently contributes a value of €24 billion to the national economy, generates 6.3% of gross value added, almost 10% of Ireland's exports and provides 7.7% of national employment. When employment in inputs, processing and marketing is included, the agri-food sector accounts for almost 10% of employment.
- Ireland's ecosystems are valued in excess of €2.6 billion per annum (Bullock et al, 2008), from which the economy and society derive a variety of services including food production and recreation. Other 'values' are more fundamental and concern the pleasure inherent in experiencing nature in all its forms, from the solitude of wilderness walks to families enjoying a busy day at a clean beach. RoI's 7,500km coastline and ocean is a national

asset, with vast potential to tap into the global marine market for seafood, tourism, energy, and new applications for health, medicine and technology.

- Ireland's seaweed and biotechnology sector is currently worth €18 million per annum, processing 36,000 tonnes of seaweed and employing 185 full time equivalent workers (Morrissey et al., 2011). The product is currently being supplied to agriculture/ horticulture, cosmetics, thalasso-therapy, the biopharma sector (functional foods, pharmaceuticals and nutraceuticals) and for human consumption. According to the Sea Change Strategy (2006), the Irish seaweed production and processing sector will be worth €30 million per annum by 2020.
- GI was formally introduced to Ireland in 2008 at an international conference organised by Fingal County Council and addressed by the Minister for DEHLG (now DECLG). The Council has since included a Chapter on GI in its County Development Plan 2011-2017. Within the Border Region, Sligo is the most proactive county regarding GI, with various projects implemented since 2008 (e.g. Cleveragh Regional Park) and a policy relating to the use of GI as a means of flood risk management in its County Development Plan 2011-2017.
- Comhar Sustainable Development Council (SDC) has made the case that GI and ES should be viewed as critical infrastructure, vital to sustainable development. Comhar SDC has identified the protection and development of GI as one of the priority areas in its proposals for a Green New Deal for Ireland, focusing in particular on ecological connectivity, habitat fragmentation and improving resilience and adaptation to climate change.
- In 2011, just over 10 billion overseas visitors came to RoI and generated almost £3bn in revenue (figures for the Border Region were 647,000 and €178m respectively). Fáilte Ireland's 2012 Visitor Attitudes Survey revealed that three in five visitors stated

that Ireland's interesting history and culture was a very important factor in choosing to holiday in Ireland.

- The ecosystems and landscapes of Scotland provide significant ecosystem goods and services and considerable economic benefit to the nation. Particularly valuable services include carbon sequestration, flood and hazard regulation, food production, timber products, renewable energy generation, and recreation and tourism. According to the UK National Ecosystem Assessment, between 2004 and 2008 the average annual total direct value of Scotland's agriculture, forestry and marine fisheries was about £2.5 billion.
- The Scottish Government has recently produced an information note on making the most of green infrastructure because of the benefits it can provide, including place-making, flooding and water management, energy and carbon management, clean air and tranquillity, health and well-being, and education. The Central Scotland Green Network (CSGN) is an ambitious national development within the National Planning Framework which aims to make 'a significant contribution to Scotland's sustainable economic development' by restoring and transforming the landscape of an area stretching from Ayrshire and Inverclyde in the west, to Fife and the Lothians in the east.
- Landscapes, wildlife and outdoor activities are consistently given as the top reasons for visiting Scotland. Nature-based tourism in Scotland is estimated to provide about £1.4 billion in income, with about 39,000 full-time equivalent jobs. Areas generating most tourism expenditure in Western Scotland in 2008 included Lochaber, Skye & Lochalsh, Arran & Cumbrae and Argyll & Bute (£555m) and South Ayrshire (£492m).

Weaknesses and Threats

- Diverse objectives and aspects of green infrastructure (GI) (particularly regarding the creation of multifunctional networks) require agreement or cooperation of varied stakeholders such as

landowners, in a participatory planning process. No mechanism for such co-operation, and particularly where to direct funding, currently exists in NI.

- Research by the Department of Agriculture and Rural Development (DARD) suggests that there is a lack of environmental knowledge transfer and integration of environmental skills amongst agriculture and forestry sectors and rural communities in NI. More knowledge is needed to instil confidence in rural landowners to invest in renewable energy schemes, and in both urban and rural landowners regarding the development of multifunctional GI networks.
- Environmental management can sometimes be considered a separate rather than integral part of production systems, whilst agri-environment schemes tend to focus on single issues rather than connectivity and multi-functionality. There is also a lack of integration of environmental issues into all sectors, and a lack of cross-sector support.
- There remains a lack of understanding worldwide about the importance of ecosystem services, with the previous NI Minister for the Environment, Alex Atwood, stating in June 2013 that ecosystem services are not fully recognised or understood in politics in NI.
- Findings from an Irish barometer study on attitudes to biodiversity among the public (Heritage Council, 2010) indicate that knowledge of biodiversity in Ireland is well below the EU average. EPA's 2012 assessment stated there is thus a need to incorporate biodiversity and ecosystem services issues into relevant educational courses.
- Analysis carried out by the Office for National Statistics in 2011 shows that the tourism ratio² for NI, which shows the importance of tourism expenditure in driving output, was estimated to be 2.4%.

² The Tourism Ratio is a measure of the economic importance of the tourism sector within regions as it shows the relationship between tourism demand and supply.

This was the lowest of the twelve UK regions. Similarly, tourism in the Border Region of Ireland only accounts for around 7% of RoI's total tourist revenue. This is the lowest contribution of any region in RoI.

- In Scotland, environmental change (including sea level rise, climate change, habitat loss and destruction, and land use changes) is recognised as a major threat to Scotland's economy and ecosystems. Most of the habitats and ecosystems considered 'natural' and semi-natural have declined in both area and condition.
- Although a large amount is already known about ecosystem services in Scotland, particularly about provisioning services, there remain significant knowledge gaps. An improved understanding and awareness of the connections and interdependencies between supporting, regulating and cultural services is required.

2.4. Key Issues and Likely Future Trends

Public Perceptions

Northern Ireland

- 2.4.1. According to an annual survey carried out by NISRA, in 2011/12, 39% of responding households thought the most important environmental problem facing NI is household waste disposal, with 31% each for pollution in rivers, climate change and traffic congestion (multiple responses were permitted). The figures for each of the 16 categories have remained fairly consistent since 2003/04, with notable exceptions being declining concern regarding air pollution, and a sharp rise followed by a steady fall for climate change. A similar survey carried out by NISRA (in 2010) focusing on the attitudes of young people in NI found that the greatest environmental concern was the loss of plants, animals and habitats (76% of respondents).
- 2.4.2. DOE's 2012 report on public perceptions on climate change in NI revealed that the level of concern about climate change has decreased since 2009, with these concerns relating to increased energy costs, an

increase in the number of severe weather events, increased flooding, damage to natural environment and wildlife, a more polluted atmosphere, and increased food costs. Three-quarters of respondents would be prepared to make changes to their lifestyle to reduce climate change.

2.4.3. The NI Chapter of the 2011 UK National Ecosystem Assessment revealed the following key findings and recommendations of relevance to the current state of the environment and decision-making at a national level:

- The ecosystem services approach should be integrated into all decision making, including a fully integrated cross-departmental and inter-sectoral approach.
- The role of ecosystem services in mitigating all human impacts, including biodiversity conservation, carbon storage and climate change adaptation, must be considered in all land and sea management. Encouraging and facilitating resilience to change is critical.
- An integrated network of high value land and marine sites is core to maximising service delivery. Effective ecosystem management requires consideration at biologically appropriate scales such as river catchment, island of Ireland or North West Atlantic.

Republic of Ireland

2.4.4. A 2007 survey carried out in RoI by the Heritage Council into public attitudes on the environmental and heritage found that 92% of respondents felt more should be done to protect the Irish countryside and 70% felt that access to heritage and the environment improves their quality of life. When asked what their preferences for spending additional tax revenue on the environment would be (out of 8 categories), 29% opted for restoration of canals and rivers, 22% for safeguarding and improving coastal landscapes, and 12% for protection and improvement of habitats. Cultural heritage assets and attractive landscapes were deemed to be less important.

2.4.5. A survey conducted by the EC in 2011 found that the environmental issue of most concern to the public in Ireland was the impact on health of

chemicals used in everyday products. Other environmental issues causing concern in Ireland were more similar to those in NI, i.e. water pollution, growing waste, and man-made disasters. The public also considered that the efficient use of natural resources and the protection of the environment were key to economic recovery and growth in the future.

2.4.6. An assessment carried out in 2012 by the Environmental Protection Agency identified the following key challenges facing RoI:

- Protecting soil and biodiversity;
- Protecting water resources;
- Improving air quality;
- Limiting and adapting to climate change;
- Building a low carbon economy;
- Using resources sustainably and efficiently;
- Implementing and enforcing environmental legislation; and
- Putting the environment at the centre of decision making.

Scotland

2.4.7. A public perceptions survey related to biodiversity and ecosystem awareness published by AlterNet in 2009 revealed that approximately 80%, 65% and 60% of respondents in Scotland were concerned about recent changes in species numbers at global, national and local levels respectively. In terms of a perceived decrease and desirability of a moderate increase in the extent of habitats, forest received the highest percentages for both, at 78% and 83% of respondents respectively. Fewer than half of respondents thought city parks had decreased, however three-quarters desired an increase in their extent. The perceived degree of influence (positive or negative) of political actors on animals, plants and their habitats was felt to be highest for foresters, farmers and conservationists (as opposed to e.g. governments or everybody in their everyday life), whilst the degree to which political actors are seen to assume their responsibility followed a similar, though weaker pattern.

Summary of Key Issues

2.4.8. From analysis of the baseline data and comments provided by environmental stakeholders on the Scoping Report, the key sustainability issues facing NI, the Border region of Ireland and Western Scotland, along with likely future trends if the INTERREG V Programme is not implemented (though many of these are outwith SEUPB's remit), are thought to be:

- Continued loss of semi-natural habitat by agricultural conversion and building and infrastructure development;
- Unfavourable condition of habitats and species in protected sites due to e.g. over/undergrazing, water pollution and invasive alien species, particularly in RoI;
- Limited protected or consideration for biodiversity outside of protected areas;
- Loss and deterioration of marine biodiversity due to unsustainable fishing practices, pollution and acidification;
- Increasing problems of pests, diseases and invasive species;
- The marine economy is underutilised, especially in RoI;
- High levels of poverty, deprivation, economic inactivity and unemployment, particularly in the Border Region of Ireland, Western Scotland, and throughout NI, and poor educational attainment in NI;
- Lack of fair and equitable access to services and public transport frequency and connectivity for rural dwellers;
- NI has the highest level of fuel poverty of any UK region (44% in 2011 compared to a UK average of 24%), with children and the elderly most at risk. The level of fuel poverty in Scotland is 28% (2010).
- Disparities in life expectancy and mortality rates between the most and least deprived areas, particularly in Scotland, and high infant mortality across the UK, but particularly in NI;

- High obesity levels compared with the rest of Europe (with figures at 24%, 25% and 27% for NI, RoI and Scotland respectively) putting pressure on health services and reducing productivity in the workplace through ill-health;
- Lack of woodland cover in NI and RoI, whilst in NI especially, woodland is not seen as an economically viable use of land resulting in a lack of management and an undeveloped small wood industry;
- The substantial quantities of peatland across the INTERREG territories exists in a degraded state and continues to be disturbed by domestic and industrial peat extraction, afforestation, wind farms, recreational activities and invasive species;
- NI is unlikely to meet WFD targets for water quality, with only 23% of river waterbodies classed as having good overall ecological quality in 2011. In RoI and Scotland the figures are 71% and 54% respectively;
- Poor water quality has been caused by poor manure management and over application of fertilisers in NI; municipal wastewater treatment plants and diffuse agricultural sources in RoI; and diffuse pollution from roads and farmland in Scotland;
- Ammonia emissions and nitrogen deposition from agricultural activities are putting significant pressure on sensitive habitats in NI and RoI;
- GHG emissions are higher per capita and/or falling more slowly in the INTERREG territories compared with the rest of the UK and Europe, in part due to rising transport emissions in NI and rising agricultural, heating/electricity and transport emissions in RoI;
- Increasingly frequent and severe weather events such as flooding are occurring across the INTERREG territories, disrupting infrastructure and agriculture;
- Warming since the mid-1980s has been more pronounced in the seas surrounding NI and RoI compared to other areas of the UK;

- The INTERREG territories have lower recycling rates and higher landfill rates than much of the rest of Europe, whilst domestic material consumption is particularly high in RoI;
- Lack of coordination across the rural tourism sector, particularly in NI, with many opportunities for sharing and promoting cultural heritage and landscape assets being missed;
- Landscapes across the INTERREG territories have been affected by housing and infrastructure development, agricultural intensification and decline/ loss of natural and cultural features;
- Lack of agreement, co-operation and funding regarding creation of multifunctional green networks in NI;
- Lack of integration of environmental issues and management into all sectors and decision making, and a lack of cross-sector support;
- Lack of knowledge and understanding of environmental issues, biodiversity and ecosystem services across the INTERREG territories, particularly in NI and RoI;
- Low economic importance of tourism expenditure within NI compared to the rest of the UK, and within the Border Region of Ireland compared to the rest of the RoI.

3. SEA FRAMEWORK AND ASSESSMENT METHODOLOGY

3.1. SEA Objectives

3.1.1. The purpose of the SEA Objectives is to ensure that the assessment process is transparent and robust and that the INTERREG V Programme considers and addresses potential environmental effects. SEA Objectives (including more detailed sub-objectives) have been set for each of the eleven sustainability topics outlined in Section 1.6.

3.1.2. The SEA Objectives are deemed to be appropriate based on the other relevant plans and programmes, baseline conditions and potential impacts identified in NI, RoI and Scotland, and responses received during consultation on the Scoping Report. The SEA Objectives against which the INTERREG V Programme priority schemes have been assessed are detailed in Table 3.1 below.

Table 3.1: SEA Objectives

SEA Objective	Sub-objective (Will the Programme...?)
1. Ecology and Nature Conservation – Protect, enhance and manage biodiversity assets and ecosystems	a. Maintain and enhance internationally and nationally designated sites b. Maintain and enhance locally designated sites c. Maintain and enhance the amount, variety and quality of ecosystems d. Maintain and enhance priority habitats and species e. Benefit protected species f. Protect the marine and coastal environment
2. Socio-Economics – Reduce deprivation and improve social cohesion of the community	a. Improve accessibility to education, employment, housing and community facilities/services b. Reduce deprivation, inequality and social exclusion c. Improve crime rates and road safety d. Help achieve a balanced population in terms of size, density and structure
3. Health and Quality of Life – Improve health and quality of life	a. Improve long-term health and wellbeing b. Encourage walking, cycling and other physical activity c. Reduce health deprivation d. Minimise the number of people and species exposed to and levels of noise and vibration pollution e. Improve the quality of living, working and recreational environments
4. Soil and Land Use – Protect and enhance soil quality	a. Safeguard and improve the highest quality soil and agricultural land b. Reduce soil pollution and degradation c. Protect soil, especially coastal areas, from erosion d. Encourage local production of food and fuel e. Encourage use of previously developed land

SEA Objective	Sub-objective (Will the Programme...?)
	f. Remediate contaminated land
5. Water – Protect, enhance and manage water resources and flood risk	<ul style="list-style-type: none"> a. Protect water resources from over-abstraction b. Protect water resources from pollution c. Improve the quality of surface water, groundwater and the sea d. Protect and enhance the status of aquatic and wetland ecosystems e. Minimise exposure to flood risk and droughts
6. Air Quality – Reduce air pollution and ensure continued improvements to air quality	<ul style="list-style-type: none"> a. Improve air quality b. Minimise nitrogen deposition on designated sites and priority habitats c. Reduce the need to travel d. Encourage use of sustainable transport
7. Climate Change – Minimise contribution to climate change and adapt to its predicted effects	<ul style="list-style-type: none"> a. Improve energy conservation and efficiency b. Encourage use of renewable energy c. Minimise emissions from transport, industry and agriculture d. Encourage land management that protects and captures carbon e. Improve resilience of habitats and the water environment to climate change impacts e. Minimise and adapt to flood risk, storms, changing rainfall patterns and varying / more extreme temperatures f. Minimise and adapt to other extreme events, ICT disruption, expansion of tourist destinations, impacts on infrastructure etc.
8. Material Assets – Conserve natural resources and reduce waste production	<ul style="list-style-type: none"> a. Safeguard natural resources (including minerals) and minimise unsustainable use b. Increase recycling rates and re-use of materials c. Minimise production of waste and quantity sent to landfill d. Improve waste management in terms of its financial costs and environmental and health impacts e. Maximise use of the existing built environment
9. Cultural Heritage – Protect, enhance and manage archaeological and cultural heritage	<ul style="list-style-type: none"> a. Preserve and enhance designated and non-designated built heritage b. Preserve and enhance designated and non-designated archaeological sites and areas c. Preserve and enhance the settings of archaeological and architectural assets d. Encourage urban renewal and improve the quality and character of the townscape / village-scape e. Promote tolerance, understanding and celebration of intangible culture and community traditions
10. Landscape – Protect, enhance and manage the character and quality of the landscape	<ul style="list-style-type: none"> a. Maintain and enhance the quality and character of landscape, seascape and coastal areas b. Maintain and enhance designated sites c. Create, maintain and enhance public open space and green infrastructure assets d. Improve visual aesthetics e. Minimise light pollution and light spill
11. Green Infrastructure and	<ul style="list-style-type: none"> a. Preserve and enhance the ability of an area to provide ecosystem services

SEA Objective	Sub-objective (Will the Programme...?)
Ecosystem Services	b. Encourage multi-functionality of greenspace to provide numerous ecosystem services simultaneously c. Encourage biophysical changes such as restoration of degraded land and enhanced connectivity of habitats and greenspace d. Strengthen positive natural connections and interactions between different areas and regions e. Encourage cultural and outdoor recreational tourism that is landscape and nature based f. Improve knowledge and understanding of the environment

3.2. Assessment Methodology

3.2.1. This stage of the SEA process involves the identification and evaluation of the likely significant effects on the environment of implementing the INTERREG V Programme and its reasonable alternatives. This follows a matrix approach and has been carried out in several stages to include high level and detailed matrix assessments, and a descriptive cumulative effects assessment.

High Level Matrix Assessment

3.2.2. The first step of the assessment process, the high level assessment, is used to identify the likely adverse, beneficial, neutral and uncertain effects of the INTERREG V Programme on the environment. Presented in matrix format, the assessment ascertains how well each of the priority schemes meet each of the SEA Objectives. A descriptive summary of the likely effects is provided alongside the matrix.

3.2.3. The high level matrix assessment is not a conclusive tool or model; its purpose is to identify those schemes for which uncertainties or potential adverse effects may arise. These particular schemes can then undergo further scrutiny at the detailed matrix assessment stage.

3.2.4. A high level matrix assessment has also been carried out on the different alternatives, including the 'zero' or 'do nothing' option. This enables comparisons to be drawn between how well each alternative option correlates with the SEA Objectives.

3.2.5. The key used in the high level matrices is as follows:

Key for Likely Effects	
++	Likely strong beneficial effect
+	Likely beneficial effect
0	Neutral / no effect
-	Likely adverse effect
--	Likely strong adverse effect
+/-	Uncertain effect

Detailed Matrix Assessment

3.2.6. The second step of the assessment process is used to scrutinise the potential adverse or uncertain effects that have been identified by the high level assessment. Each priority scheme or action identified as potentially having such effects has been analysed against each of the SEA Objectives in more detail (including those objectives for which beneficial effects were identified).

3.2.7. In order to determine the likely significance of effects, the second stage of the assessment addresses the range of criteria identified in Annex II of the SEA Directive (reproduced below).

Characteristics of the effects and of the area likely to be affected, having regard, in particular, to:

- *the probability, duration, frequency and reversibility of the effects,*
- *the cumulative nature of the effects,*
- *the transboundary nature of the effects,*
- *the risks to human health or the environment (e.g. due to accidents),*
- *the magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected),*
- *the value and vulnerability of the area likely to be affected due to:*
 - *special natural characteristics or cultural heritage,*
 - *exceeded environmental quality standards or limit values,*
 - *intensive land-use,*








- the effects on areas or landscapes which have a recognised national, Community or international protection status.

3.2.8. The detailed matrices used in the assessment of the INTERREG V Programme include consideration of the duration, frequency, permanence and geographic extent of effects (including transboundary effects) which feed into the consideration of magnitude (i.e. the degree of change that the proposed scheme would have on the environment). This is then correlated with the value and vulnerability of the receiving environment, which includes consideration of the protected status of the area. Table 3.2 below shows how significance of effect is determined.

Table 3.2: Significance of Effects Matrix

		MAGNITUDE OF CHANGE			
		High	Medium	Low	Negligible
VALUE / VULNERABILITY	High	Major	Major/ Moderate	Moderate	Moderate/ Minor
	Medium	Major/ Moderate	Moderate	Moderate/ Minor	Minor
	Low	Moderate	Moderate/ Minor	Minor	Minor/ Negligible
	Negligible	Moderate/ Minor	Minor	Minor/ Negligible	Negligible

3.2.9. The significance of effect can be either adverse or beneficial. The key used in the detailed matrices is therefore as follows:

Key for Significance of Effect	
	Major or Major/Moderate beneficial effect
	Moderate or Moderate/Minor beneficial effect
	Minor or Minor/Negligible beneficial effect
	Negligible beneficial/adverse effect or neutral effect
	Minor or Minor/Negligible adverse effect
	Moderate or Moderate/Minor adverse effect
	Major or Major/Moderate adverse effect

- 3.2.10. A descriptive summary of the significance of likely effects for each SEA objective and an overall verdict on the priority scheme assessed is provided alongside each detailed matrix.

Cumulative Effects Assessment

- 3.2.11. The SEA Directive (in Annex I) also requires identification and evaluation of likely secondary, cumulative and synergistic effects of the Programme. Cumulative effects are best considered by looking at the INTERREG V Programme as a whole, as the insignificant effects of schemes under possibly different priorities may combine with one another to create a significant effect. Synergistic effects go beyond this, producing a total effect that is greater than the sum of the individual effects. Secondary effects are those that are not a direct result of the Programme, but where, over time the original effects lead to additional impacts. These terms are not mutually exclusive, and often the term 'cumulative effects' is taken to include secondary and synergistic effects.
- 3.2.12. In order to ensure that cumulative effects are considered throughout the SEA and INTERREG V Programme preparation process, some consideration has been given through the SEA Objective 'Green Infrastructure and Ecosystem Services', which is a broad topic that looks at the inter-relationship between all of the other sustainability topics. Such effects have also been considered through the review of other plans and programmes carried out during the scoping process.
- 3.2.13. The main purpose of the cumulative effects assessment is to report on the identified significant cumulative effects in a transparent and accessible way. This is done in descriptive format, with particular focus on analysis of effects on selected environmental resources; past impacts and future impacts relating to these resources; cumulative impact pathways (including cause-effect relationships); uncertainties and assumptions; and in-combination effects (of INTERREG V Programme priority schemes identified as having adverse effects in the detailed matrix assessment) with the plans and programmes identified in Section 2.2.

3.3. Uncertainties, Data Gaps and Technical Deficiencies

3.3.1. It is recognised that with a programme of this nature, the precise environmental impacts will often depend on the specific projects funded under the INTERREG V Programme. These will emerge over the duration of the Programme, and hence at this stage full details, particularly regarding project locations, are not available. For this reason some impacts are recorded as uncertain in the matrices. Where this is the case, further discussion is provided in the relevant commentaries.

4. CONSIDERATION OF ALTERNATIVES

4.1.1. Consideration of alternatives is a key feature of the SEA process; the SEA Directive requires that the Environmental Report should consider:

‘Reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme’ and give ‘an outline of the reasons for selecting the alternatives dealt with’ (Article 5.1 and Annex I (h)).

4.1.2. In practical terms, it refers to possible alternative mechanisms for delivering the INTERREG V Programme, and the assessment of the impacts of each of these options against the SEA Objectives.

4.1.3. The ODPM (now DCLG) guidance on SEA recognises that it is not for the SEA to decide on the options to be considered. Instead this SEA focuses on the alternative delivery options actually considered in the preparation of the INTERREG V Programme; these have been identified by SEUPB, in collaboration with stakeholders and the SEA and ex ante evaluation teams. The SEA has assessed which of the identified options performs the best environmentally.

4.2. Alternative Policy Options / Delivery Mechanisms

4.2.1. With European funded programmes such as the INTERREG V Programme, constraints on what practical alternatives exist are often restricted by the need to comply with pre-set criteria determined at a European level. This can have the effect of limiting the alternatives that are available to the programme makers.

4.2.2. The draft ETC Regulations include a total of 11 Thematic Objectives and 36 Investment Priorities (i.e. those set out in the draft ERDF Regulations plus 4 additional Investment Priorities specific to cross-border cooperation). Member States are required to select up to 4 Thematic Objectives and focus on a small number of investment priorities (in order to concentrate resources across fewer activities than previously) in line with the Europe 2020 strategy.

- 4.2.3. As indicated in Section 1.3 of this Report, the draft ETC Regulations state that cross-border cooperation programmes should contribute to: developing an economy based on knowledge, research and innovation; promoting a greener, more resource-efficient and competitive economy; fostering high employment that delivers social and territorial cohesion; and developing administrative capacity. However, the list of the investment priorities under the different thematic objectives should be adapted to the specific needs of the European territorial cooperation goal, in particular by allowing for the continuation of legal and administrative cooperation as well as maritime cross-border cooperation not covered by other programmes.
- 4.2.4. SEUPB has undertaken programme development around Thematic Objectives 1, 6, 7 and 9. The alternatives assessed in this SEA consider other relevant Thematic Objectives and Investment Priorities that SEUPB could have chosen, as well as different delivery mechanisms within the chosen Objectives.

4.3. Assessment of Alternatives

Alternative 1 – Do nothing or ‘zero’ option

- 4.3.1. This possible alternative assumes that the current 2007-2013 Programme will run its course and the new INTERREG V Programme will not be adopted in Northern Ireland, the Border Region of Ireland and Western Scotland. UK and Irish Government match funding would also be removed.

Alternative 2 – Continue with the INTERREG IV Programme 2007-2013

- 4.3.2. This alternative assumes that the current INTERREG IV Programme will be extended to the period 2014-2020, with the current priorities and allocations (listed below) continuing.
- Priority 1: Co-operation for a more prosperous cross-border region
 - a) Business support – providing assistance to new and existing businesses to promote innovation and creative activities.

- b) Investment in the business infrastructure – support the business infrastructure necessary to create a strong, innovative regional economy.
 - c) Networking – Promoting the development of a stronger business and entrepreneurial environment by supporting cross-border collaboration between businesses.
 - d) Tourism – Enhance the performance of the industry by supporting products based on culture, heritage, natural resources and marine and water based tourism on a cross border basis.
- Priority 2: Co-operation for a more sustainable cross-border region
 - a) Healthcare.
 - b) Public sector collaboration.
 - c) Rural development.
 - d) Environmental protection.
 - e) Renewable energy.
 - f) Roads.
 - g) IT and Telecommunications.
- Priority 3: Technical Assistance
 - a) Programme information and publicity.
 - b) Management, monitoring and evaluation of the programme.

4.3.3. The draft ETC Regulations for 2014-2020 (published in March 2012) made certain changes including a requirement for Member States to commit to focusing resources across a smaller number of activities (within 4 of the new Thematic Objectives), in line with the Europe 2020 strategy. Continuing with the 2007-2013 Programme is not a viable option, however, because it is not possible to directly lift a programme developed under the 2007-2013 Regulations and implement it under 2014-2020 Regulations. Funding for the 2014-2020 Programme (€180 million) is also approximately 30% less than in 2007-2013 (€256 million).

Alternative 3 – Draft proposals as at July 2013

4.3.4. The proposals put forward by SEUPB as potential Programme content on 8th July 2013 incorporated 8 of the possible 16 Investment Priorities within Thematic Objectives 1, 4, 6 and 9 of the draft ETC Regulations. The proposals are presented below.

- Thematic Objective 1: Research and Innovation
 - a) Enhancing research and innovation infrastructure and capacities; developing research and innovation excellence; and promoting centres of excellence, in particular those of European interest.
- Thematic Objective 4: Shift Towards a Low Carbon Economy
 - a) Promoting the production and distribution of renewable energy sources.
 - b) Developing smart distribution systems at low voltage levels.
- Thematic Objective 6: Environmental Protection and Resource Efficiency
 - a) Addressing the significant needs for investment in the waste sector to meet the requirements of the environmental acquis.
 - b) Addressing the significant needs for investment in the water to meet the requirements of the environmental acquis.
 - c) Protecting biodiversity, soil protection and promoting ecosystem services including NATURA 2000 sites and green infrastructures.
- Thematic Objective 9: Social Inclusion and Combating Poverty
 - a) Investing in health and social infrastructure which contribute to national, regional and local development, reducing inequalities in terms of health status and transition from institutional to community based services.
 - b) Support for physical and economic regeneration of deprived urban and rural communities.

Alternative 4 – Other relevant Investment Priorities not put forward in the July 2013 proposals

4.3.5. The draft ETC Regulations include a total of 11 Thematic Objectives and 36 Investment Priorities. This alternative considers other Investment Priorities not put forward in the July 2013 draft proposals that could help deliver the aims set out by the EC for (cross-border) cooperation programmes. It must be noted, however, that some of the Thematic Objectives focus on the ESF (8, 9 and 10) and some on the ERDF (1, 3 and 4) and as such may be a low priority for funding through ETC.

- Thematic Objective 1: Strengthening research, technological development and Innovation:
 - a) Supporting technological and applied research, pilot lines, early product validation actions, advanced manufacturing capabilities and first production in Key Enabling Technologies and diffusion of general purpose technologies.
- Thematic Objective 3: Enhancing the competitiveness of SMEs:
 - a) Promoting entrepreneurship, in particular by facilitating the economic exploitation of new ideas and fostering the creation of new firms;
 - b) Developing new business models for SMEs, in particular for internationalisation.
- Thematic Objective 4: Supporting the shift towards a low carbon economy:
 - a) Promoting energy efficiency and renewable energy use in SMEs, public infrastructures and in the housing sector;
 - b) Promoting low-carbon strategies for urban areas.
- Thematic Objective 6: Protecting the environment and promoting resource efficiency:
 - a) Protecting, promoting and developing cultural heritage;
 - b) Action to improve the urban environment, including regeneration of brownfield sites and reduction of air pollution.

- Thematic Objective 7: Promoting sustainable transport and removing bottlenecks in key network infrastructures:
 - a) Supporting a multimodal Single European Transport Area by investing in the Trans-European Transport Network (TEN-T) network;
 - b) Enhancing regional mobility through connecting secondary and tertiary nodes to TEN-T infrastructure;
 - c) Developing environment-friendly and low-carbon transport systems and promoting sustainable urban mobility;
 - d) Developing comprehensive, high quality and interoperable railway system.
- Thematic Objective 8: Promoting employment and supporting labour mobility:
 - a) Integrating cross-border labour markets, including cross-border mobility, joint local employment initiatives and joint training.
- Thematic Objective 9: Promoting social inclusion and combating poverty:
 - a) Promoting gender equality and equal opportunities across borders, as well as promoting social inclusion across borders.
- Thematic Objective 10: Investing in education, skills and lifelong learning:
 - a) Developing and implementing joint education and training schemes.
- Thematic Objective 11: Enhancing institutional capacity and an efficient public administration
 - a) Promoting legal and administrative cooperation and also cooperation between citizens and institutions.

4.3.6. Given that Member States are required to focus their reduced funds on a smaller number of activities compared to the previous Programme, within a maximum of 4 Thematic Objectives, it would not be realistic for SEUPB to choose all of the Priorities as set out in Alternative 4.

Alternative 5 – Proposals as set out in the Consultation Draft dated November 2013 and updated May 2014

- 4.3.7. This alternative is the one that is being published for public consultation in June 2014. Thematic Objectives 1, 6 and 9 as selected in July 2013 continue, however Thematic Objective 4 is no longer included. Though the development of a low carbon economy is important across the programme region and beyond, it was considered by SEUPB that operations within this area would present considerable operational challenges and the level of investment required to achieve significant benefits would be beyond the scope of the programme. Thematic Objective 7 has been included in its place.
- 4.3.8. The selected Investment Priorities have also been modified slightly since the July 2013 draft, with additional detail that is more realistic and relevant to the local situation. Thematic Objectives 1 and 9 also include aspects relevant to the low carbon economy and sustainable transport. The objectives and priorities for this alternative are detailed in Section 1.3 of this report.
- 4.3.9. A high level summary of how well each of these five alternative options perform against the SEA Objectives is provided in the matrix below (Table 4.1).

Table 4.1: Assessment of Alternatives

SEA OBJECTIVES		ALTERNATIVES					
		1	2	3	4	5	
		Do Nothing	Continue with Interreg IV	Draft Proposals as at July 2013	Alternative Investment Priorities	Draft Proposals as at November 2013, amended May 2014	
1	Ecology	- Without the Programme's contribution to restoring/managing habitats, species, ecosystems and the NATURA 2000 network, these features and sites are unlikely to see any improvement and may deteriorate further.	+/- Inappropriately sited infrastructure developments related to business, tourism, renewable energy and roads could adversely affect ecology, though benefits should occur through environmental protection measures.	+/- Inappropriately sited developments related to renewable energy and community regeneration could adversely affect ecology, though restoring/managing habitats, species, ecosystems and the NATURA 2000 network will have substantial benefits.	+/- Inappropriately sited developments related to renewable energy, transport infrastructure and business expansion, along with improvements to existing buildings could adversely affect ecology.	+/- Measures to support and facilitate renewables may increase the risks presented by such developments on ecological receptors however the strong focus on the protection, preservation, enhancement and management of species habitats will have substantial benefits.	
2	Socio-Economics	-- Without the Programme's strong focus on supporting research, innovation, cooperation, social inclusion and regeneration of deprived areas, NI and the border regions will continue to be affected by poverty and high rates of unemployment and economic inactivity.	++ Making NI and the border areas of Ireland and Western Scotland more prosperous and more socially integrated places to live will help to reduce the long standing problems of out migration in these areas.	++ Proposals to enhance research and innovation in health and life sciences, improve cooperation and accessibility between territories and regenerate deprived areas will help to reduce the long standing problems of poverty, unemployment and economic inactivity.	++ There will be substantial socio-economic benefits as a result of support for SMEs, renewable energy, new transport infrastructure, equality and education and training initiatives.	++ Proposals to enhance research and innovation in SMEs and to improve sustainable cross border mobility will address the long standing problems of poverty, unemployment and economic inactivity in the area.	
3	Health	-- Without the Programme's strong focus on social inclusion, health infrastructure and regeneration of deprived areas, poverty and health issues are likely to continue, impacting on quality of life.	+ Health will benefit directly from improved access to healthcare in border areas, and indirectly from increased prosperity.	++ Health and quality of life will benefit directly from improved access to healthcare in border areas, community regeneration and a cleaner environment, and indirectly from increased prosperity and health research.	+ There will be indirect health and quality of life benefits as a result of support for SMEs, renewable energy, new transport infrastructure, equality and education and training initiatives.	++ Health and quality of life will benefit directly from improved access to healthcare in border areas, community regeneration and a cleaner environment, and indirectly from increased prosperity and medical research.	
4	Soil	0 Existing trends will continue.	0 Tourism could have mixed effects including disturbance yet improved public knowledge of geological sites. Benefits should occur through environmental protection measures.	+/- Impacts could be positive or negative depending on whether new development is located on greenfield or brownfield land.	+/- New transport infrastructure could have an adverse effect on land/soil quality, however, improvements to the urban environment would be beneficial.	+ Soils are not a key focus of the programme, however measures to protect & restore biodiversity and to invest in the water sector may bring some indirect benefits.	

5	Water	-	Without the Programme's contribution to investing in the water sector and improving river basin management, water quality in NI is likely to remain below WFD standards.	0	Water related tourism may have mixed effects, whilst benefits should occur through environmental protection measures.	+/-	Investing in the water sector and improving river basin management will enhance the water environment, though there is potential for adverse effects through (marine) development.	+/-	There is potential for adverse effects through development including transport infrastructure and marine renewable energy.	+	There is some uncertainty over likely impacts from the development of renewables related research infrastructure, however strongly positive effects will occur through cross border river basin and marine management and improved waste water treatment.
6	Air	0	Existing trends will continue.	+/-	Indirect positive impacts are anticipated due to the increased investment in renewable energy, IT and telecommunications, and general environmental protection, however negative impacts are likely to occur due to infrastructure development and tourism due to rising demand for energy and transport.	+/-	Indirect positive impacts are anticipated due to the increased investment in renewable energy and general environmental protection, however negative impacts may occur if increased prosperity and accessibility in the territories leads to rising demand for energy and transport.	+/-	Positive impacts would occur from a focus on low carbon, including renewable energy, energy efficiency and sustainable transport, however negative impacts may occur if increased prosperity and accessibility in the territories leads to rising demand for energy and transport.	+	Indirect positive impacts are anticipated due to the increased investment in renewable energy and sustainable transport.
7	Climate	-	Without the Programme's focus on the production and distribution of renewable energy, the burning of fossil fuels is likely to continue to increase.	+/-	Positive impacts are anticipated due to the increased investment in renewable energy, IT and telecommunications, and general environmental protection, however negative impacts are likely to occur due to infrastructure development and tourism due to rising demand for energy and transport.	+	Increased investment, distribution, research and innovation in renewable energy should substantially reduce GHG emissions, whilst habitat/ecosystem restoration and river basin management should enhance adaptation to climate change. Minor adverse effects may occur if increased prosperity and accessibility in the territories leads to rising demand for energy and transport.	+/-	Significant positive impacts would occur due to the focus on low carbon, including renewable energy, energy efficiency and sustainable transport, however negative impacts may occur if increased prosperity and accessibility in the territories leads to rising demand for energy and transport.	++	Facilitation of investment in renewable energy and promotion of sustainable transport initiatives should facilitate substantial reductions in GHG emissions, whilst habitat/ecosystem restoration and river basin management should enhance adaptation to climate change.
8	Material Assets	0	Existing trends will continue.	0	No impacts are anticipated.	+/-	Positive impacts are expected from investment in the waste sector, though new development could result in unsustainable resource use.	+/-	Positive impacts could occur from investment in low carbon technologies, though new development could result in unsustainable resource use.	+	Positive impacts are expected from investment in the water sector and further development of resource capability and facilities in the programme area.
9	Cultural Heritage	0	Existing trends will continue.	+	Promotion of tourism is predicted to have a positive impact through the stimulation of additional interest in cultural heritage.	+/-	Inappropriately sited developments including infrastructure, buildings and renewable energy could adversely affect heritage assets, though community regeneration is likely to enhance townscapes.	+	Inappropriately sited developments including infrastructure, buildings and renewable energy could adversely affect heritage assets, though there would be substantial benefits from measures to protect cultural heritage assets.	+/-	There is limited interaction between the programme and cultural heritage assets. Opportunities to improve cultural heritage through landscape restoration and community engagement have not been fully explored.

10	Landscape	0	Existing trends will continue.	-	Inappropriately sited infrastructure developments related to business, tourism, and roads could adversely affect landscape, though benefits may occur if previously neglected areas are regenerated. Investment in renewable energy will have an adverse effect on landscape and visual amenity, whilst benefits should occur through environmental protection measures.	+/-	Inappropriately sited developments including infrastructure, buildings and renewable energy (particularly on- and off-shore wind turbines) could adversely affect landscapes and visual amenity, though community regeneration and habitat restoration are likely to enhance land-, town- and sea-scapes.	+/-	Inappropriately sited developments including infrastructure, buildings and renewable energy (particularly on- and off-shore wind turbines) could adversely affect landscapes and visual amenity, though improvements to the urban environment should improve townscapes and visual amenity.	+	Support for energy related research and innovation may contribute to existing threats posed to sensitive landscapes from renewables developments. Measures to protect and restore biodiversity and investment in the water sector present opportunities for landscape benefits.
11	GI & ES	-	Without the Programme's contribution to restoring habitats and ecosystems, the ability of these areas to deliver important services may deteriorate.	+/-	Inappropriately sited infrastructure developments related to business, tourism, and roads could adversely affect the ability of ecosystems to provide services and potentially cause fragmentation of habitats/green space, though benefits should occur through environmental protection measures.	+	Restoring habitats and ecosystems will enhance the ability of these areas to deliver important services.	+/-	New transport infrastructure could both create new linear habitats and sever existing corridors.	++	Restoring habitats, landscapes, rivers and marine areas will enhance the ability of these areas to deliver important ecosystem services, whilst cross border ecosystem management partnerships will be particularly beneficial in spreading environmental knowledge across the Programme area.

Key for Likely Effects	
++	Likely strong beneficial effect
+	Likely beneficial effect
0	Neutral / no effect
-	Likely adverse effect
--	Likely strong adverse effect
+/-	Uncertain effect

4.4. Reasons for Selection of Chosen Alternatives

- 4.4.1. As can be seen in Table 4.1, the 'do nothing' option is the least favourable alternative as the Programme will fund numerous socio-economic and environmental improvements to the border regions that would not be realised without this or an equivalent scheme. Continuing with the INTERREG IV Programme 2007-2013 would have certain benefits, but is not feasible for the reasons outlined in Section 4.3, i.e. changes to EU funding regulations and priorities.
- 4.4.2. The draft proposals for the INTERREG V Programme set out in the July 2013 Operational Programme are quite different from the 2007-2013 Programme and have additional benefits for the environment. The differences between the two alternatives are mainly the change in focus from tourism and business infrastructure towards research and social infrastructure, whilst there is also greater emphasis on environmental protection in the more recent document.
- 4.4.3. Adopting the investment priorities suggested in Alternative 4 would not be realistic due to the reasons outlined in Section 4.3, i.e. the need to focus spending on a limited number of activities within a maximum of four Thematic Objectives, as set out in the draft ETC Regulations. Nevertheless, the assessment of Alternative 4 has highlighted some additional environmental and sustainability benefits that may be worth incorporating into the Programme.
- 4.4.4. The proposals contained within the May 2014 Consultation Draft provide more clarity and relevance to the likely forthcoming schemes over the period 2014-2020 compared to the priorities put forward in July 2013 (Alternative 3), and are more financially feasible. Additionally there are benefits expected for climate, air quality, water, socio-economics and quality of life due to proposals to promote low carbon transport, protection and restoration of biodiversity and investment in water infrastructure.
- 4.4.5. The objectives and priorities included within the May 2014 draft of the INTERREG V Programme is therefore the alternative option that is presented for public consultation.

5. ASSESSMENT OF IMPACTS

5.1. High Level Matrix Assessment

5.1.1. A high level matrix assessment has been carried out on the chosen alternative; this can be seen in Table 5.1 below.

Table 5.1: High Level Matrix Assessment

Thematic Objectives and Investment Priorities		Ecology	Socio-Economics	Health	Soil	Water	Air	Climate	Material Assets	Cultural Heritage	Landscape	GI & ES
Thematic Objective 1: Strengthening research, technological development and innovation (€75m)												
1a	Enhancing research & innovation (€55m)	+/-	++	++	+/-	+/-	+/-	+	+	+/-	+/-	+/-
1b	Enhanced innovation in SMES (€20m)	0	++	+	0	0	0	+	0	0	0	0
Thematic Objective 6: Preserving and protecting the environment and promoting resource efficiency (€372m)												
6a	Protecting and restoring biodiversity (€22m)	++	++	++	0	0	0	+	0	0	+	+
6b	Investment in Water Sector (€15m)	+	+	+	0	++	0	+	+	0	0	+
Thematic Objective 7: Promoting sustainable transport and removing bottlenecks in key network infrastructures (€60m)												
7a	Sustainable Transport & Mobility (€60m)	+/-	+	+	0	0	+	+	+	0	0	0
Thematic Objective 9: Social Inclusion and Combating Poverty (€53m)												
9a	Reduction in healthcare inequalities and improved well-being (€53m)	0	+	++	0	0	0	0	0	0	0	0
Technical Assistance (€15m)												
n/a	Monitoring, Evaluation, Communication (€15m)	0	0	0	0	0	0	0	0	0	0	0

Key for Likely Effects	
++	Likely strong beneficial effect
+	Likely beneficial effect
0	Neutral / no effect
-	Likely adverse effect
---	Likely strong adverse effect
+/-	Uncertain effect

Most of the proposed Programme activities are predicted to have either neutral or beneficial effects. The likely beneficial effects are summarised by sustainability topic below. This is followed by a discussion on uncertain and potentially adverse effects; the objectives and actions to which these uncertain/adverse effects relate are then explored further through the detailed matrix assessment.

Ecology and Nature Conservation

- 5.1.2. The Investment Priorities proposed through Thematic Objective 6, will likely have significant beneficial effects on ecology and nature conservation. Designed to protect the environment and promote appreciation of the natural environment, this Priority will target cross border designated areas, cross border river basin catchments and cross border marine waters and European designated sites in order to manage, protect, restore and enhance habitats (both aquatic and terrestrial).

Socio-Economics

- 5.1.3. All of the main proposed Investment Priorities will have positive effects on socio-economics, and in the majority of cases these will be significant benefits. Direct benefits will arise due to provision of new employment opportunities under Thematic Objective 1, along with provision of training, promotion of cross border employability and mobility, and support for the education sector. Indirect benefits will arise from a range of softer measures occurring around investment water sector, sustainable transport and mobility and reduction in health inequalities under Thematic Objectives 6, 7 and 9 respectively. These activities may have multiplier effects, e.g. attracting inward investment and creating additional jobs.
- 5.1.4. Public transport access is currently poor in many rural and border areas, so enhancing regional mobility through local sustainable transport routes and modes will have significant benefits for business and communities across NI, the Border Region or Ireland and Western Scotland.

Health and Quality of Life

5.1.5. All of the main Investment Priorities are expected to benefit the health and wellbeing of residents in NI, the Border Region and Western Scotland. In particular, Priority 9a aims to increase provision of cross-border healthcare, improving patient outcomes and decreasing health inequalities. This will have substantial direct benefits for those people in greatest need.

5.1.6. There will also be significant indirect health and wellbeing benefits from enhanced prosperity stimulated through Thematic Objectives 1, through an improved environment and quality of life (Thematic Objective 6) and improved sustainable transport measures (Thematic Objective 7).

Soil and Land Use

5.1.7. No beneficial effects predicted.

Water

5.1.8. INTERREG V will have significant benefits for water in NI, the Border Region and Western Scotland. It will address water quality and quantity issues directly through Priority 6b, which aims to promote better management of cross-border water resources and sharing of best practice / technical expertise.

Air Quality

5.1.9. The Programme will have direct benefits on air quality as a result of Priority 7a which aims to promote development of low carbon transport systems. It will also have indirect benefits on air quality due to the focus on promoting the investment in renewable energy research and innovation (Priority 1a).

Climate Change

5.1.10. The INTERREG V Programme addresses both climate change mitigation and adaptation. There will be significant beneficial effects on climate change mitigation as a result of the focus on investment in research and development of renewable energy (Priority 1a), promotion of enhanced research in SMEs (Priority 1b) and investment in sustainable transport & mobility (Priority 7a). These measures should reduce the

demand for fossil fuels, the burning of which causes release of greenhouse gases (GHG).

- 5.1.11. There will also be indirect benefits regarding climate change adaptation, with Priority 6a and 6b focusing on protection and restoration of habitats and investment in water infrastructure. Such measures should help Northern Ireland, the Border Region and Western Scotland to deal more effectively with extreme weather events.

Material Assets

- 5.1.12. Investment actions carried out under Priority 1a and 7a will likely lead to beneficial effects on privately and publicly owned material assets particularly those related to water and research infrastructure.

Cultural Heritage

- 5.1.13. No beneficial effects predicted.

Landscape

- 5.1.14. There will be an indirect beneficial effect on landscape as a result of Priority 6a's focus on protecting and restoring biodiversity, some of which is likely to have a landscape component.

Green Infrastructure and Ecosystem Services

- 5.1.15. Inclusion of Priorities 6a and 6b in the INTERREG V Programme means there will be direct beneficial effects for ES, due to support for protection and restoration of biodiversity and indirect beneficial effects through efforts to improve cross-border participation in the management of water resource.

Uncertainties

- 5.1.16. None of the priorities and activities proposed through the INTERREG V Programme consultation document are location-specific; they apply to the whole eligible region. In the case of investment priorities potentially leading to new developments (mainly 1a and 7a), indirect effects may occur on ecology, soil, water, air, cultural heritage, landscape and GI/ES. In such cases, planning regulations and related processes

such as EIA provide the most effective means of determining the suitability of specific proposals.

5.2. Detailed Matrix Assessment

5.2.1. As indicated by the high level assessment, no adverse effects are expected to occur as a result of the INTERREG V Programme. There are however areas under Thematic Objective 1 and 7 where activities were predicted to have uncertain effects.

5.2.2. These have been analysed further in the detailed matrix assessment to ascertain the significance of the potential adverse effects and how these can be avoided or minimised. The detailed matrices presented below (Table 5.2a and 5.2b) show the likely environmental effects by Investment Priority, whilst the commentary below is arranged by sustainability topic for those with likely adverse effects.

Table 5.2a: Detailed Assessment Matrix Investment Priority 1a

Investment Priority 1a: Enhancing research and innovation (R&I)											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Vulnerability	Significance	Certainty	Mitigation Required
1	Ecology	This Priority aims to facilitate and promote investment in the medical & bio-sciences and renewables sectors. It does not seek to invest directly in specific projects. Investment facilitated under the programme may ultimately lead to development of new business or energy infrastructure with associated indirect impact on ecology. Any capital measures would be subject to the usual controls through the planning process and associated Environmental Impact Assessment regulations.	Long term	Infrequent	Permanent	Local	Negligible	Negligible to high	Minor	Low	Yes
2	Socio-Economics	Proposals to enhance research and innovation in health and life sciences and technology to world class standards, create jobs in these areas, support the education sector and indirectly attract inward investment will have significant socio-economic benefits in the longer term.	Long term	Continuous	Permanent	Regional	High	Low to high	Major	Medium	No
3	Health	Health and quality of life will benefit indirectly from increased prosperity and employment linked to health and renewable energy research, and directly in the longer term from enhanced medical provision. However, poorly sited offshore installations have potential for disruption of commercial fisheries, collision risks for ships and disturbance of marine recreation which could reduce quality of life for those affected.	Long term	Continuous	Permanent	Regional	Medium	Low to high	Major / Moderate	Medium	No
4	Soil	Investment facilitated under the programme may ultimately lead to development of new business or energy infrastructure although this would be subject to the usual controls through the planning process and associated Environmental Impact Assessment regulations. Any resulting impacts on soils are likely to be small and localised.	Long term	Infrequent	Permanent	Local	Neutral	Negligible to high	Neutral	Low	No

Investment Priority 1a: Enhancing research and innovation (R&I)											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Vulnerability	Significance	Certainty	Mitigation Required
5	Water	There is limited mechanism for the investment priority to impact on water. All new activities directly or indirectly facilitated through the programme would be subject to existing legislation and controls aimed at protecting the water environment. Given the strong focus on water provided by Thematic Objective 7, it is unlikely that any proposals conflicting with this objective would be brought forward under the programme.	Long term	Infrequent	Temporary / reversible	Regional	Neutral	Low to high	Neutral	Medium	No
6	Air	Support for research and innovation could have varied effects depending on the nature of the activities supported. Given the focus on medical science and renewable energy any associated impacts are more likely to be positive than negative.	Long term	Continuous	Permanent	Regional	Minor / Negligible	Negligible to high	Minor/ Negligible	Low	No
7	Climate	Positive impacts are anticipated due to the support for renewable energy research and development.	Long term	Continuous	Permanent	Cross-border	Medium	High	Moderate/ Minor	Medium	No
8	Material Assets	No direct investment in new infrastructure is proposed although promotion of increased research and innovation is likely to support continued operation of existing research centres.	Long term	Infrequent	Permanent	Regional	Negligible	Low	Minor/ Negligible	Medium	No
9	Cultural Heritage	No direct effects are expected on cultural heritage as the programme does not entail direct investment in this area nor support development likely to impact on cultural heritage.	Long term	Infrequent	Permanent	Regional	Neutral	Medium	Neutral	Low	No
10	Landscape	Investment facilitated under the programme may ultimately lead to development of new business or energy infrastructure, which may impact on landscape, although this would be subject to the usual controls through the planning process and associated Environmental Impact Assessment regulations.	Long terms	Infrequent	Permanent, possibly reversible	Local	Low	Negligible to high	Minor	Low	Yes
11	GI & ES	No direct adverse impacts are anticipated.	Long terms	Continuous	Permanent	Regional	Neutral	Negligible to high	Neutral	Medium	No

Investment Priority 7a: Sustainable Transport & Mobility											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Vulnerability	Significance	Certainty	Mitigation Required
1	Ecology	Any new transport infrastructure directly or indirectly funded through the programme may entail localised impacts on ecology through habitat loss. Such developments would be subject to controls through the planning process and associated processes such as Environmental Impact Assessment. This is likely to ensure that significant adverse effects do not occur.	Long term	Infrequent	Permanent	Local	Negligible	Negligible to high	Minor	Low	Yes
2	Socio-Economics	Transport is a key factor determining the productivity and economic opportunity in the programme area and consequently measures to facilitate new investment in transport infrastructure are likely to deliver long-term socio-economic benefits.	Long term	Continuous	Permanent	Cross-border	Medium	Low to high	Major / Moderate	Medium	No
3	Health	Socio-economic benefits delivered under this aspect of the programme are likely to lead to commensurate indirect effects for health and well-being. Measures to promote cycling will also likely lead to indirect health effects.	Long term	Continuous	Permanent	Regional	Minor	Low to high	Moderate	Medium	No
4	Soil	Small-scale and localised effects may occur as a result of new investment in transport infrastructure directly or indirectly stimulated by the proposed development. Local planning controls provide a means of further controlling such effects.	Long term	Infrequent	Permanent	Local	Neutral	Negligible to high	Neutral	Low	No
5	Water	Small-scale and localised effects may occur as a result of new investment in transport infrastructure directly or indirectly stimulated by the proposed development. Local planning controls provide a means of further controlling such effects. Other aspects of the programme focus strongly on the water environment and it is unlikely that measures which provided fundamental conflict with these objectives would be brought forward under the programme.	Long term	Infrequent	Temporary / reversible	Regional	Neutral	Low to high	Neutral	Low	No
6	Air	Traffic emissions are one of the main issues affecting air quality in the programme area. Measures to stimulate environmentally friendly or low carbon transport will therefore deliver significant benefits for air quality. However, reliance on car-use tends to be a very well entrenched issue particularly in rural areas so there is likely to be a limit to what can be achieved under this programme in isolation.	Long term	Continuous	Permanent	Regional	Minor	Negligible to high	Minor/ Negligible	Medium	No

Investment Priority 7a: Sustainable Transport & Mobility											
SEA Objective		Description of Effect	Duration	Frequency	Permanence	Geographic Extent	Magnitude	Vulnerability	Significance	Certainty	Mitigation Required
7	Climate	Similar issues apply to those discussed above for air.	Long term	Continuous	Permanent	Cross-border	Minor	High	Minor/ Negligible	Medium	No
8	Material Assets	Greater accessibility and improved socio-economic opportunity is likely to lead to a small beneficial effect on material assets.	Long term	Infrequent	Permanent	Regional	Negligible	Low	Minor/ Negligible	Medium	No
9	Cultural Heritage	No direct effects are expected on cultural heritage as the programme does not entail direct investment in this area nor support development likely to impact on cultural heritage.	Long term	Infrequent	Permanent	Regional	Neutral	Medium	Neutral	Low	No
10	Landscape	New transport infrastructure facilitated under the programme may impact on landscape, although this would be subject to the usual controls through the planning process and associated Environmental Impact Assessment regulations. The programme focuses on more efficient / sustainable use of existing transport networks (eg, waterways) rather than construction of new links and this is likely to limit any potential adverse effects.	Long terms	Infrequent	Permanent, possibly reversible	Local	Negligible	Negligible to high	Minor / Negligible	Low	Yes
11	GI & ES	No direct adverse impacts are anticipated.	Long terms	Continuous	Permanent	Regional	Neutral	Negligible to high	Neutral	Medium	No

Ecology and Nature Conservation

- 5.2.3. Whilst the programme aims to stimulate third party investment rather than directly invest in new infrastructure, some capital works are likely to indirectly result from the programme, particularly under Investment Priorities 1 and 7. Such works may lead to localised effects on ecology through loss of habitat or displacement of individual animals or plants.
- 5.2.4. The nature of the programme is such that any development proposals are likely to be limited in extent and targeted specifically on the sectors funded by the programme. Local planning controls and regulation designed to prevent inappropriate development will also act to ensure that any effects are not significant.
- 5.2.5. Overall, impacts on ecology arising under both Thematic Objective 1 and 7 are assessed as being of Minor Adverse significance.

Socio-Economics, Health and Quality of Life

- 5.2.6. No adverse effects predicted.

Soil and Land Use

- 5.2.7. No adverse effects predicted.

Water

- 5.2.8. No adverse effects predicted.

Air and Climate Change

- 5.2.9. No adverse effects predicted.

Material Assets

- 5.2.10. No adverse effects predicted.

Cultural Heritage

- 5.2.11. No adverse effects predicted.

Landscape

- 5.2.12. The issues associated with landscape are similar to those discussed for ecology, in that any new development proposals directly or

indirectly stimulated under the programme have the potential to impact on landscape. The focus under Thematic Objective 7 on more sustainable or efficient uses of transport networks such as waterways has the effect that significant adverse issues on landscape are less likely.

- 5.2.13. Impacts on landscape arising under Thematic Objective 1 and 7 are assessed as being of Minor Adverse and Minor / Negligible adverse significance respectively.

Summary of Adverse Effects

- 5.2.14. Whilst most aspects of the programme are anticipated to be neutral or beneficial when assessed against the sustainability objectives used in this assessment, there is some (limited) potential for localised adverse impacts to occur on ecology and landscape as a result of development activities associated with the programme. These are assessed as being of Minor or Negligible/Minor Significance and as a result should not be regarded as issues of significant consequence to the programme development and implementation.

5.3. Cumulative Effects Assessment

Cumulative effects within the Programme

- 5.3.1. The Detailed Assessment predicted similar adverse impacts for some of the activities, which could have a cumulative (additive or perhaps synergistic) effect on the identified receptors. These potential cumulative effects are considered in Table 5.3 below (only those investment priorities and sustainability topics where adverse effects are predicted in Tables 5.2a and 5.2b are considered).

Table 5.3: Cumulative effect of Priorities within the INTERREG V Programme

SEA Objective		Priority 1a	Priority 7a	Cumulative Effect
1	Ecology	A potential minor adverse impact is predicted due to the loss of habitat resulting from new research or energy facilities indirectly funded under the INTERREG V programme.	Any new transport infrastructure directly or indirectly funded through the programme may entail localised impacts on ecology through habitat loss.	The scale of development either proposed or likely to occur through the INTERREG V Programme is small. These two investment priorities are targeted on distinctly separate sectors and this combined with the very limited impacts potentially associated with each priority in isolation is likely to have the effect that significant cumulative effects do not occur.
10	Landscape	Investment facilitated under the programme may ultimately lead to development of new business or energy infrastructure, which may impact on landscape, although this would be subject to the usual controls through the planning process and associated Environmental Impact Assessment regulations.	New transport infrastructure facilitated under the programme may impact on landscape. The programme focuses on more efficient / sustainable use of existing transport networks (eg, waterways) rather than construction of new links and this is likely to limit any potential adverse effects.	Issues relating to cumulative impact are similar to those discussed above; there is relatively little overlap between the measures targeted under each priority and the impacts are in isolation limited in extent and frequency. Therefore it is not anticipated that there will be any mechanism for significant cumulative impacts to occur.

5.3.2. Overall it is anticipated that the Programme is unlikely to lead to significant adverse cumulative effects.

Cumulative effects with other plans and programmes

5.3.3. In-combination effects could also occur between Priority 1a, 7a and other plans and programmes that propose offshore renewable energy or mass energy storage installations. These potential cumulative effects are considered in more detail in Table 5.4 below. It should be noted that these impacts do not include mitigation measures.

Table 5.4: In-Combination Assessment with Other Plans and Programmes

Plan or Programme	Objectives and Policies of Relevance	Likely Cumulative Effects with INTERREG V
DETI (2012) Offshore Renewable Energy Strategic Action Plan 2012-2020	The overall aim of the ORESAP is; to optimise the amount of renewable electricity sustainably generated from offshore wind and marine renewable resources in Northern Ireland's waters in order to enhance diversity and security of supply, reduce carbon emissions, contribute to the 40% renewable electricity target by 2020 and beyond and develop business and employment opportunities for NI companies. The associated development opportunity is for up to 900 MW of offshore wind and 300 MW from tidal resources in Northern Ireland waters by 2020.	The INTERREG V Programme aims to facilitate the development of a range of renewable energy resources on a cross border basis (which is likely to include tidal energy). As a result there is potential for cumulative effects with the ORESAP. As INTERREG focuses on supporting development of renewables expertise and supply chains (as opposed to directly supporting new deployment), its contribution to any adverse effects is unlikely to be significant.
DETI (2012) Sustainable Energy Action Plan 2012-2015	<p>DETI set out numerous "main actions for the future" regarding renewables and other aspects of sustainable energy. Of particular relevance are the commitments to:</p> <ul style="list-style-type: none"> • Contribute to the growth of the NI sustainable energy sector (through Invest NI) to 8.9% of NI GVA by 2015. • Work with DOE, developers, planners and those responsible for environmental consents to ensure that the need for renewable energy to address the environmental impacts of climate change is recognised, that good quality applications are made and that clear, consistent and proportionate procedures are in place for the consenting of renewable installations. • Undertake "capacity studies" (including landscape capacity study, ecological study and bird migration study, with DOE and others) in order to determine with more accuracy how much development could be accommodated in different locations across Northern Ireland before significant cumulative effects start to emerge. 	The emphasis of the Action Plan is on sustainability and proposes landscape and ecology studies to determine the least sensitive development locations, as well as monitoring of the potential cumulative effects of renewable energy developments. The INTERREG V Programme will be able to benefit from these studies to minimise its own impacts, rather than creating additional impacts. Cumulative effects are thus unlikely.
DETI (2011) Draft Onshore Renewable Electricity Action Plan	This plan outlines the anticipated actions to develop onshore wind resources in Northern Ireland to the level required to contribute to meeting UK and EU targets.	Strengthening of supply chains and research capacity around renewables is likely to work in synergy with the Action Plan, hence making its main objectives more achievable. In-combination effects may therefore occur but the significance of these is uncertain at this stage.

Plan or Programme	Objectives and Policies of Relevance	Likely Cumulative Effects with INTERREG V
DOE (2012) Draft Northern Ireland Marine Position Paper	NI has not yet adopted its Marine Plan; it is currently being drafted and is expected to be consulted on in Summer 2014. The Position Paper sets out the Executive's objectives for the sustainable development of the marine area. These cover the following relevant topics: Energy production and infrastructure development; and Undersea Telecommunications Cabling.	No developments affecting marine life or habitats will be directly supported by the INTERREG Programme and hence cumulative effects are unlikely.
DOE (2006) An Integrated Coastal Zone Management Strategy for Northern Ireland 2006 – 2026	<p>Relevant Strategy aims for the coast include:</p> <ul style="list-style-type: none"> • To maintain and enhance Northern Ireland's natural resources within the coastal zone and protect, maintain and enhance the condition of designated nature conservation sites. • To conserve, protect and where possible enhance the estuarine and coastal environment and terrestrial ecosystems dependent on this such as marine wetlands and salt marshes. • To secure a vibrant economic future through the sustainable use of the natural resources of the coastal zone. • To maintain the visual appeal and environmental quality of Northern Ireland's coastal landscapes and seascapes as an underpinning asset of economic development. 	The ICZM Strategy does not propose any renewable energy development, though it does promote sustainable use of natural resources for economic gain. Its requirements to preserve the natural heritage of the coast mean that cumulative effects with the INTERREG V Programme are unlikely.
DCENR (2012) Strategy for Renewable Energy: 2012-2020	<p>Underpinning the Irish Government's energy and economic policy objectives are the following five Strategic Goals:</p> <ol style="list-style-type: none"> 1. Progressively more renewable electricity from onshore and offshore wind power for the domestic and export markets. 2. Green growth through research and development of renewable technologies including the preparation for market of ocean technologies. <p>The document identifies a challenge of winning public acceptance around environmental and other impacts and securing benefits for local communities.</p>	Strengthening the capacity for research and innovation in renewables under the INTERREG V Programme is likely to increase the ability to meet the objectives of this strategy. Therefore some cumulative effects may occur although the significance is uncertain at this stage in the absence of project specific details.
DCENR (2010)	The Plan sets out three development scenarios to be reviewed in 2015 and	As above, building research capacity and strengthening

Plan or Programme	Objectives and Policies of Relevance	Likely Cumulative Effects with INTERREG V
Draft Offshore Renewable Energy Development Plan (OREDPA) for Ireland	<p>2020. These consist of:</p> <ul style="list-style-type: none"> • Low development scenario – 800 MW of offshore wind and 75 MW of wave and tidal development; • Medium development scenario – 2,300 MW of offshore wind and 500 MW of wave and tidal development; • High development scenario – 4,500 MW of offshore wind and 1,500 MW of wave and tidal development. 	supply chains are likely to work in synergy with the OREDPA and consequently some cumulative effects of uncertain significance may occur.
Department of the Taoiseach (2008) Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal 2009-2014	<p>Relevant Government actions to Build the Smart Economy include:</p> <ul style="list-style-type: none"> • We will fast-track development and commercialisation of ocean energy technologies under the Ocean Energy Development Programme 2008-2012; • Investing over €1 billion in 2008 and in 2009 in extending and upgrading the national electricity and gas distribution and transmission networks, while ESB is investing €22 billion up to 2020 in the electricity network, the National Smart Meter programme and renewable energy R&D and commercialisation projects. 	The INTERREG V Programme aims to facilitate the development of a range of renewable energy resources on a cross border basis (which is likely to include tidal energy). As a result there is potential for cumulative effects with the Framework.
Marine Scotland and Scottish Government (2013) Blue Seas - Green Energy: A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters	<p>The Marine Plan aims to:</p> <ul style="list-style-type: none"> • Maximise the contribution that offshore wind energy makes to renewable energy generation in Scotland; • Maximise opportunities for economic development, investment and employment; • Minimise adverse effects on people, other economic sectors and the environment; and • Deliver offshore wind while complementing other forms of marine energy generation. 	Strengthening the capacity for research and innovation in renewables under the INTERREG V Programme is likely to increase the ability to meet the objectives of this strategy. Therefore some cumulative effects may occur although the significance is uncertain at this stage in the absence of project specific details.
Scottish Government (2011) 2020 Routemap for Renewable Energy in Scotland	The Routemap sets out the Government's target to meet 100% of demand for electricity from renewable energy by 2020, and 11% demand for heat. It also sets out sectoral routemaps with proposed actions including encouraging support for and investment in the various types of renewable energy and improving skills in these areas.	Neither the route-map nor INTERREG aims to directly support new renewables projects and hence significant in-combination effects are unlikely to occur.

Plan or Programme	Objectives and Policies of Relevance	Likely Cumulative Effects with INTERREG V
Scottish Government (2011) The Government Economic Strategy	<p>Key relevant actions to drive sustainable economic growth and develop a more resilient and adaptable economy include:</p> <ul style="list-style-type: none"> • A £70 million National Renewables Infrastructure Fund to help leverage private sector investment to develop the infrastructure across the country to support offshore renewables and ensure that Scotland becomes Europe's green energy powerhouse. 	<p>Strengthening the capacity for research and innovation in renewables under the INTERREG V Programme is likely to increase the ability to meet the objectives of this strategy. As a result there is potential for cumulative effects with the Economic Strategy, particularly regarding visual effects as developments in the Irish Sea or North Atlantic between Northern Ireland and Western Scotland may be seen from both sides.</p>
Scottish Government, SEPA, HIE and Scottish Enterprise (2010) A Low Carbon Economic Strategy for Scotland	<p>The Strategy sets out low carbon economic aims to:</p> <ul style="list-style-type: none"> • Provide 80% of our electricity, 11% of our heat production and 10% of our transport use from renewable sources by 2020. <p>The specific action of most relevance is to strategically drive and co-ordinate the public sector's collective contribution to the growing offshore energy opportunities, seeking maximum benefit for Scotland.</p>	<p>The Economic Strategy will not directly lead to development; the INTERREG V Programme will support the aims of the Strategy by helping to deliver expansion of low carbon and renewable energy technologies. Cumulative effects are thus not possible.</p>
EC (2013) Action Plan for a Maritime Strategy in the Atlantic Area	<p>The strategy for the Atlantic covers coastal, territorial and jurisdictional waters of five EU Member States. Of particular relevance is the following:</p> <ul style="list-style-type: none"> • Reducing Europe's carbon footprint through climate change mitigation, for example expansion of offshore wind farms and tidal technology in the Atlantic, but also changes in maritime transport will contribute to carbon reduction; and • Developing the sustainable exploitation of the Atlantic's seafloor natural resources. 	<p>The EC Action Plan will not directly lead to development; the INTERREG V Programme will support the aims of the EC Action Plan by helping to deliver expansion of tidal technology in the Atlantic. Cumulative effects are thus not possible.</p>
EC (2010) Europe 2020 Economic Strategy	<p>The Commission has issued six country specific recommendations (CSRs) to the UK to help it improve its economic performance. Of most relevance is:</p> <p>6. Investment in Infrastructure</p> <p>The UK needs to invest in its energy and transport infrastructure if it is to continue to meet the needs of the rest of the economy over the coming decade. In terms of contribution from renewable energy sources the UK is ranked 25th out of the 27 Member States in the EU and should make</p>	<p>The EU is putting pressure on the UK (including NI) to increase spending on renewable energy installations and upgrading existing energy networks. This is likely to be form synergy with Investment Priority 1 of the INTERREG V Programme, with associated impacts as discussed previously. Europe 2020 does not directly set out development proposals for NI, however;</p>

Plan or Programme	Objectives and Policies of Relevance	Likely Cumulative Effects with INTERREG V
	significant improvements when upgrading its energy infrastructure. The UK should look to provide greater certainty in investment from both public and private sources.	cumulative effects are thus not possible.

5.3.4. The following plans and programmes may have in-combination effects with Priority 1a of the INTERREG V Programme regarding renewable energy installations. There is considerable uncertainty in making these predication as in many cases the precise measures to be stimulated under the identified plans and programmes are at this point not finalised.

- DETI (2012) Offshore Renewable Energy Strategic Action Plan 2012-2020;
- DCENR (2012) Strategy for Renewable Energy: 2012-2020;
- DCENR (2010) Draft Offshore Renewable Energy Development Plan (OREDP) for Ireland;
- Department of the Taoiseach (2008) Building Ireland's Smart Economy: A Framework for Sustainable Economic Renewal 2009-2014;
- Marine Scotland and Scottish Government (2013) Blue Seas - Green Energy: A Sectoral Marine Plan for Offshore Wind Energy in Scottish Territorial Waters; and
- Scottish Government (2011) The Government Economic Strategy.

5.3.5. It should be noted that whilst only adverse effects have been assessed in full, the INTERREG IV Programme is designed to work in synergy with other plans and programmes and there are some areas therefore, particularly around socio-economic objectives, where significant cumulative benefits will occur.

6. MITIGATION AND RECOMMENDATIONS

6.1.1. Annex 1 of the SEA Directive requires the Environmental Report to set out *'the measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme'*. This chapter therefore sets out mitigation measures appropriate to minimising the adverse effects identified in Chapter 5.

6.1.2. Though not a legal requirement, this chapter also includes enhancement measures to maximise the beneficial effects offered by the INTERREG V Programme. Finally, an opinion of the Programme's residual effects with mitigation included has been given.

6.2. Minimising Adverse Effects

6.2.1. The SEA process has identified some potential adverse effects on the environment of the proposed INTERREG V Programme 2014-2020 being implemented.

6.2.2. To ensure that these identified adverse effects are minimised, the following mitigation measures are proposed, by sustainability topic (the priorities/activities that the mitigation measures relate to are included afterwards in brackets). Such measures will be particularly important where development is proposed in sensitive and/or protected areas, or where impacts are thought likely to occur across country borders.

6.2.3. It must be noted that responsibility for carrying out these mitigation measures does not necessarily lie with SEUPB. Responsibility may lie with other Government departments and agencies, or may be addressed through the planning system e.g. through compliance with legislation and planning policy, developer contributions and EIAs as appropriate. For many of the sustainability topics (especially ecology and nature conservation, cultural heritage and landscape), mitigating adverse effects relating to the capital aspects of the INTERREG Programme will often be carried out as a matter of course during the planning process for individual projects, unless they are classed as permitted development.

Ecology, Nature Conservation and Landscape

- 6.2.4. The predicted effects on ecology and landscape are mostly indirect, arising as a result of capital works indirectly stimulated through the INTERREG Programme. The most effective mitigation of such impacts will be to ensure that the siting and development of projects is sensitive to ecological and landscape interest and in particular avoids the use of sites with known value or sensitivity.
- 6.2.5. Proposals to promote the use of transport corridors in particular should take account of ecological and landscape priorities as such linear routes, if appropriately designed and managed, can actively enhance local areas and act as an important means of movement / colonisation of species through a landscape.
- 6.2.6. Synergy between Thematic Objectives 1 and 7, and the more environment focused measures under Thematic Objective 6 should be a key focus of the Programme.

6.3. Enhancing Beneficial Effects

- 6.3.1. The majority of priorities and activities proposed through the INTERREG V Programme are expected to have at least some beneficial effects on the environment of Northern Ireland, the Border Region of Ireland and Western Scotland (see Section 5.1). This is particularly so when compared to the 'do nothing' alternative as many aspects of the environment are currently in poor and/or deteriorating condition (see Sections 2.3 and 2.4).
- 6.3.2. The INTERREG V Programme's strong focus on improving the protection and quality of the natural environment, particularly elements relating to ecosystem services, river basins and the marine environment will add to the benefits delivered through the current INTERREG IV Programme. However, if funding allows, even more could be done to maximise the environmental benefits. Enhancement measures are suggested below, by sustainability topic (such measures may be regarded as best practice, but SEUPB is under no obligation to consider or endorse these).

Health and Quality of Life

6.3.3. The DEHLG-commissioned 2008 report on 'Benefits and Costs of Biodiversity in Ireland' revealed the following on the subject of human health: *"There is growing evidence that experience of open countryside, wildlife and natural landscapes promotes psychological wellness and physical health; avoiding modern "diseases of affluence", such as depression, diabetes, asthma, obesity and heart disease... Even passive appreciation of the natural world is a proven remedy for stress and anxiety... Access to green space and an awareness of biodiversity in urban areas has also been linked with increased physical activity, longevity and reduced stress..."*

6.3.4. Also of relevance to the INTERREG V Programme, on the subject of social cohesion and quality of life, the same report revealed: *"...the development of environmental values, which an awareness of the natural world can foster, has been linked to a reduced propensity to anti-social behaviour in children and young adults, and to an increased sense of social responsibility, community spirit, empathy and connection... A recent study of the management, use and biodiversity of selected public parks in the Dun Laoghaire and Rathdown area found that park users who were questioned about their opinions and experiences generally felt that their local parks were an important social resource, and that the very existence of their park as an accessible local amenity had positive social and health benefits..."*

6.3.5. Specific enhancement measures for consideration through the INTERREG V Programme therefore include:

- Initiatives related to reducing health inequalities (Priority 9a) should extend to promoting engagement in outdoor recreational activities (e.g. walking, cycling, green gyms) and making use of the improved natural environment (through Priority 6a) to benefit the physical and mental health of local people.

Water

6.3.6. Specific enhancement measures for consideration through the INTERREG V Programme include:

- Promoting environmentally responsible behaviour in marine environments (Priority 6b).
- For Programme activities close to waterbodies or rivers, particularly those taking place in areas straddling the international border, restoration of riparian and wetland habitat could be considered in order to help meet EU and national targets on water quality and resources (e.g. through the Water Framework Directive), climate change and biodiversity (Priority 6b).

Climate Change

6.3.7. Specific enhancement measures for consideration through the INTERREG V Programme include:

- Climate change related research could be included as one of the criteria for selection of research & innovation projects under Priority 1a.
- Initiatives delivered through Priority 6a and 6b should emphasise the importance of climate change adaptation for preserving habitats and quality of life and managing risk of natural disasters.

Cultural Heritage

6.3.8. Specific enhancement measures for consideration through the INTERREG V Programme include:

- Water management schemes and restoration of ecosystems such as former peat or wetlands (Priorities 6a and 6b) may need to consider impacts on cultural heritage.
- Encourage the development of a mechanism (by the National Monuments Service in the RoI and the DOE in NI) which would allow information on archaeological and built heritage assets on both sides of the border to be made available through the websites of these organisations (this would encourage a standardised,

joined up approach to heritage recording and management on both sides of the border).

Landscape

6.3.9. Specific enhancement measures for consideration through the INTERREG V Programme include:

- Use of measures under Priorities 6a and 6b to conserve and enhance vulnerable and sensitive landscapes.
- The Scottish Land Use Strategy states that landscape change should be managed positively and sympathetically, considering the implications of change at a scale appropriate to the landscape in question (as landscapes are important for a sense of identity and to individual and social wellbeing). This should be borne in mind for Priority 6b.

Green Infrastructure and Ecosystem Services

6.3.10. Given that environmental management is often considered a separate rather than an integral part of production systems with a general lack of integration of environmental issues into other sectors, the INTERREG V Programme is well placed to address this through 'environmental education'. The Programme could invest in this area through Priorities 1a and 1b by including a better understanding of the environment in its research and innovation programme for businesses and universities, and through Priorities 6a and 6b by extending the cross border ecosystems and water management partnerships to a wider audience.

6.3.11. The Scottish Government has taken a particularly pro-active approach to addressing ecosystems services amongst EU member states, and as such makes some useful recommendations in its Land Use Strategy that could be applied in NI and the Border Region of Ireland as well as in Western Scotland:

- *"Land use decisions should be informed by an understanding of the functioning of the ecosystems which they affect in order to*

maintain the benefits of the ecosystem services which they provide.

- *Outdoor recreation opportunities and public access to land should be encouraged, along with the provision of accessible green space close to where people live, given their importance for health and well-being.*
- *People should have opportunities to contribute to debates and decisions about land use and management decisions which affect their lives and their future, along with opportunities to broaden understanding of the links between land use and daily living”.*

6.3.12. The European Environment Agency’s (EEA) report on GI and territorial cohesion states the following: “...*in order to achieve, or at least move towards territorial cohesion, the importance of the environmental dimension of a territory, including ecosystem services, landscape, biodiversity and resource protection, must be recognised... Green infrastructure represents environmental assets and services and should be used as a tool to improve territorial cohesion at the environmental level and ensure ecological continuity.*”

6.3.13. The NI Regional Development Strategy contains further detail on GI and (urban) regeneration: “*Ensure that environmental quality in urban areas is improved and maintained, particularly with adequate provision of green infrastructure. Part of the process of urban and rural renaissance requires even greater significance being given to the design and management of the public realm. It is important to promote recreational space within cities, towns and neighbourhoods, and new developments or plans should make provision for adequate green and blue infrastructure*”.

6.3.14. Whilst Priorities 6a and particularly 6b will go a long way to improving GI and ES in the eligible region, they mainly relate to more remote countryside areas. A focus on urban measures would allow for provision of new (permeable and cooling) greenspace and/or improvements to the multifunctionality and connectivity of existing

greenspace to ensure that ecosystem service delivery is maintained and ideally enhanced in more built up areas.

6.3.15. Improving quality of life and reducing health inequalities can be achieved in part through encouraging access to the natural environment. This will include bringing nature into more built up areas through urban greening measures and promotion of walking, cycling, green gyms and conservation work but also encouraging recreational use of more rural landscapes. Priority 6a could therefore seek not only to protect the natural environment, but also to increase public access to and enjoyment of it (ensuring that sensitive areas and species are avoided).

6.3.16. Ensuring connectivity of (cross-border) ecological networks, e.g. through creation of or linking up existing stepping stone habitats and other green and blue infrastructure assets is something that the INTERREG V Programme is likely to deliver for NI, the Border Region of Ireland and Western Scotland through Priorities 6a and 6b. However, the importance of connectivity across the (non-protected) landscape could be emphasised more, as the primary focus at present is on improving the quality of protected nature conservation sites. There is a need for a coordinated planned approach regarding GI to direct funding to areas of most benefit; as emphasised earlier in this report, so landowners and local authorities will need to work together.

6.3.17. As stated in Comhar Sustainable Development Council's GI for Ireland report, due to the importance of GI in managing the environment rather than just protecting it, it has particular potential to assist in meeting the requirements of a range of European Directives (Habitats, Birds, Water Framework and Floods). Because of the multi-functional and multi-beneficial nature of GI, demands and requirements of different sectors and societies are more easily addressed and can be reconciled through integrated cost-effective actions.

6.3.18. As the INTERREG V Programme is expected to have potentially cross-border environmental effects on ecology, water, cultural heritage and landscape, SEUPB and relevant Northern Irish, Irish and Scottish

government departments, agencies and local authorities should work more closely together to monitor these sorts of impacts.

6.4. Residual Effects of the INTERREG V Programme

- 6.4.1. Through adoption of the mitigation measures suggested in Section 6.2 (these will need to be specifically referred to in the final INTERREG V Programme 2014-2020 document to ensure that they are adhered to by all projects funded over the life of the Programme), it is anticipated that none of the effects identified as adverse in the detailed matrix assessment will be of greater than minor significance, and may well be negligible. This will ensure that, even without adoption of enhancement measures, the overall effect of the INTERREG V Programme is strongly positive.
- 6.4.2. Adoption of the proposed mitigation measures should also ensure that identified adverse cumulative effects, both between the activities within the INTERREG V Programme and between the INTERREG V Programme and other plans and programmes, will not be significant.

7. MONITORING AND NEXT STEPS

7.1. Consultation on the Environmental Report

7.1.1. This Environmental Report (including NTS) is being presented for public and statutory consultation over the period 3/6/14 to 29/7/14, allowing for overlap with / at the same time as the draft INTERREG V Programme 2014-2020.

7.1.2. The NI Government has designated the DOE as the statutory Consultation Body and delivery of this function is led by NIEA. The Environmental Report has also been issued to the relevant Consultation Bodies in the RoI and Scotland. Members of the public likely to participate in SEA consultation are those affected or likely to be affected by, or having an interest in the decision-making, including relevant non-governmental organisations, such as those promoting environmental protection.

7.1.3. The purpose of this stage is to give the public and the Consultation Bodies an opportunity to express their opinions on the findings of the Environmental Report, and to use it as a reference point in commenting on the INTERREG V Programme. In line with the SEA Directive and Regulations, SEUPB must take account of the Environmental Report and of any opinions which are expressed upon it as it prepares the INTERREG V Programme for adoption. Therefore, comments received from the Consultation Bodies, members of the public and other stakeholders during the consultation process must be considered and, if appropriate, addressed in the final ex ante and INTERREG V Programme documents.

7.1.4. Once the INTERREG V Programme has been adopted, an SEA Statement will be produced to provide information on how the Environmental Report and consultees' opinions were taken into account in deciding the final form of the INTERREG V Programme.

7.2. Monitoring Proposals

7.2.1. Article 10 of the SEA Directive requires SEUPB, as the Managing Authority, to monitor significant environmental effects of implementing the INTERREG V Programme. This must be done in such a way as to also identify unforeseen adverse effects and to take appropriate remedial

action. Monitoring should commence as soon as the programme is adopted, with annual reporting carried out for the life of the programme. It may be necessary to revise the monitoring programme periodically so that it takes account of new methods and increased understanding of the baseline environment.

7.2.2. It is important that any monitoring proposed by the SEA should aim to specifically monitor the impact of the Programme rather than monitoring trends in the baseline environment that would have occurred regardless of the Programme. In accordance with the NI SEA Regulations, monitoring should also focus on aspects of the programme where environmental impacts are predicted to be significant. It may thus be useful to monitor the adoption and effectiveness of mitigation measures set out in Section 6.2 (proposed for impacts identified as adverse in the detailed assessment matrices). As revealed in Section 6.4, residual adverse environmental effects of the INTERREG V Programme (i.e. after mitigation measures have been adopted) are likely to be negligible to minor and thus not significant.

7.2.3. The draft ETC Regulations state that Cooperation Programmes must contain a performance framework defining programme-specific milestones against which progress in implementation can be assessed. Common indicators have been defined by the EC to better capture the outputs of and increase the overall orientation on results; these indicators should be complemented by programme-specific indicators. In both cases, baselines shall be set using the latest available data and targets shall be fixed for 2022, but may be expressed in quantitative or qualitative terms.

7.2.4. Co-ordinated Agenda for Marine, Environment and Rural Affairs Science (CAMERAS) have approved a monitoring strategy for Scotland published by the Scottish Government in 2011. The document suggests that environmental monitoring programmes should include:

- *State of the environment, i.e. changes in the condition of air, land and water and the ecological consequences of these changes,*

including those parts of the environment that have a high value such as designated habitats and species;

- *Ecosystem services such as landscape, pollination and water supply;*
- *Socio-economic consequences, i.e. social attributes such as the historic environment and human health and wellbeing.*

7.2.5. SEUPB proposes to assess and monitor the environmental impact of the INTERREG V Programme during the years 2014-2020 by setting up an Environmental Working Group. This Group will develop a monitoring scheme for those areas identified through the detailed assessment matrices where it is possible to capture Programme effects.

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Appendix A: Scoping Consultation Responses

Comment ref.	Page of letter	Scoping Report ref.	Comment	Action carried out to address comment
Organisation & contact: Northern Ireland Environment Agency (Pat Corker, Principal Policy Officer)				
Date received: 27 June 2013				
1	1	Page 15 (Table 2.2)	Refer to 'Air pollution and local air quality'.	Addressed in Table 1.4 of the Environmental Report.
2	1	Page 15 (Table 2.2)	It is suggested that under the sustainability topic 'Climate Change', the sub-topic should refer to 'adaptation to relevant climate change risks and opportunities' and take account of all relevant impacts rather than focus on flooding and global warming.	Addressed in Table 1.4 of the Environmental Report.
3	1	Ch.3 Page 47	Note that there are three PAH monitoring sites in Northern Ireland. Elevated PAH levels at monitoring sites in Northern Ireland are predominantly due to the domestic burning of bituminous (smoky) coal. Suggestions include: <ul style="list-style-type: none"> • Consult DOE's website for updated air quality/air pollution data; • Helpful information in latest Air Quality Report for NI; and • In air quality/issues necessary to give details of pollutants commonly associated with declared AQMAs and their sources. 	Updated in Section 2.3 of the Environmental Report.
4	2	Page 49	Make reference to the findings outlined in the Northern Ireland Report of the UK Climate Change Risk Assessment and any relevant risks / opportunities across (1) natural environment, (2) agriculture and forestry, (3) business, (4) buildings and infrastructure and (5) health and well-being. The finding of the assessment is likely to impact upon the list of key environmental and sustainability issues outlined under Section 3.12 under Climate Change.	Updated in Sections 2.3 and 2.4 of the Environmental Report.
5	2	Page 49	Consideration should be given to the inter-relationship between the SEA topics and the impact of climate change across these areas.	The link between climate change and other SEA topics has been emphasised throughout the Environmental Report.
6	2	Page 49	The statement 'there is some evidence of an upward trend in mean annual rainfall, with less rain falling in summer months' does not match the published DOE statistics, so a reference is required of report it was taken from.	Noted.
7	2	Page 50 (Table 3.2)	More up to date data is available. Rather than 2008 data, you should use 2011 which was published recently. (Note with the 2008 data, recalculating the 2008 figures results in a UK reduction to be -19% rather than -20% (source: UK 'by source' Inventory 1990-2008).	Updated in Section 2.3 of the Environmental Report.
8	2	Page 50 (Table 3.3)	All fine except for England's Energy Supply – it should be 32.4% not 32.0%.	Noted.
9	2	Page 51 (Table 3.4)	All fine except for Land Use Change in 2000, it should be -116 rather than -16.	Noted.

10	2	Page 55	The source data on the EPA.ie website could not be found. You should also use the most up to date published figures available i.e. 1990-2011, rather than 1999-2008.	Updated in Section 2.3 of the Environmental Report.
11	2	Page 55 (Table 3.5)	All fine for Scotland except for Energy Supply in 2009, it should be 18535 rather than 48535.	Noted.
12	2	Page 71	Reference should be made to: (1) public perceptions on climate change in NI and (2) the NI Environmental Statistics Report 2013 available at http://www.doeni.gov.uk/index/information/asb/statistics/environment_statistics.htm	Addressed in Section 2.4 of the Environmental Report.
13	3	Page 74	Note that air pollution emissions (in particular, ammonia) from agricultural activities represent a significant pressure on sensitive habitats/ ASSIs / SACs in Northern Ireland.	Addressed in Section 2.3 of the Environmental Report.
14	3	Page 77 (Table 4.1)	The SEA sub-objectives under (6) Climate Change should be widened and not focus solely on flood risk, storm events and global warming. For example, other extreme weather events should be considered along with other relevant risks / opportunities as outlined in the NI Report of the CCRA. It would be helpful to build resilience and prepare for these impacts across all relevant areas as much as possible.	Addressed in Table 3.1 of the Environmental Report.
15	3	Appendix A	Objectives under Climate Change should include reference to: <ul style="list-style-type: none"> • EU Adaptation Strategy (2013); • NI Report of UK Climate Change Risk Assessment (2012); and • The Cross Departmental Working Group on Climate Change (2012) – contains an update on 2011 NI GHG Emissions Reduction Action Plan. 	Updated in Section 2.2 and Appendix B of the Environmental Report.
16	3	Appendix A	It should also be noted that the new Northern Ireland Greenhouse Gas Emissions Inventory was published on 7 th June 2013 and section 3.7 will need to be updated to reflect this.	Updated in Section 2.2 and Appendix B of the Environmental Report.
17	3	Appendix A	Please note that the latest version of the UK Air Quality Strategy is 2007.	Updated in Section 2.2 and Appendix B of the Environmental Report.
18	3	Page 61	Minor point, but the Giant's Causeway is not an historic environment designation but a natural landscape one.	Addressed in Section 2.3 of the Environmental Report.
19	3	Page 61	Wording is a bit misleading. The last sentence may read more accurately as 'The condition of scheduled monuments is assessed regularly, and results of an inspection survey which included a random sample were published in 2009 by NIEA in the Condition and Management Survey of the Archaeological Resource (CAMSAR) for Northern Ireland'.	Noted.
20	3	Page 61	Wording is a little misleading. The owners of listed buildings in a state of disrepair can be issued with an urgent works notice which outlines the action which the DOE will take to carry out emergency works if the owner does not initiate these within seven days.	Noted.
21	4	Appendix Maps	This shows all monuments rather than the scheduled ones. It might be worth plotting monuments in State Care and scheduled monuments. The associated lists/tables might also list monuments in care, which would be a closer comparison to the RoI National Monuments than currently, where figures for scheduled monuments and National Monuments are given.	The relevant map, Table 1.2 and Section 2.3 of the Environmental Report have been updated.

22	4	Page 15 (Table 2.2)	<p>We would suggest that the following is included within the sustainability topics:</p> <ul style="list-style-type: none"> - In Ecology & Nature, the Sub-topics box should include: Sites of Local Nature Conservation Importance (SLNCIs) as published in adopted and Draft Area Plans and "biodiversity outside designated sites". - In Soil & Land Quality, the Sub-topics box should include: Geological ASSIs, Geological SLNCIs, carbon storage and water attenuation. 	Addressed in Table 1.4 of the Environmental Report.
23	4	Chapter 3	The baseline on designated sites is not based on up to date information but the condition assessment dated 2008. Although there is no further update on condition, the designation programme is ongoing and there are now (as of end of March 2013) 360 ASSIs and 17 SPAs.	Updated in Table 1.2 and Section 2.3 of the Environmental Report.
24	4	Chapter 3	The baseline information is based on general Northern Ireland data and trends and has not undertaken any specific analysis of the border areas. These areas may have a greater biodiversity interest as there has been less development and agricultural improvements in these areas. This should be investigated and considered in the environmental report.	Addressed in Section 2.3 of the Environmental Report.
25	4	Chapter 3	We welcome the use of Green Infrastructure and Ecosystem Services as an SEA topic. This topic should also include the supporting role of biodiversity which can be identified through ecological networks, with reference to stepping stone habitats and connectivity as rural development programmes have the potential to impact on these or could be tailored to help with connectivity if a coordinated planned approach was undertaken.	Addressed in Table 1.4 and Sections 2.3, 2.4, 5.2, 6.2 and 6.3 of the Environmental Report.
26	4	Chapter 3	We advise that one of the key issues in relation to ecology and nature conservation is missing: nitrogen deposition is a significant issue for sensitive habitats in Northern Ireland as background levels are already higher than the critical loads for some habitats (http://www.apis.ac.uk/). This is especially relevant for the Interreg programme as more than 80% of ammonia emissions are from agricultural sources (http://archive.defra.gov.uk/environment/quality/air/airquality/publications/ammonia/documents/ammونيا-in-uk.pdf) and the programme will fund Anaerobic Digesters or farm diversification schemes which could further increase ammonia emissions. We request that the environmental report considers this issue in detail.	Addressed in Section 2.3 of the Environmental Report, though agriculture not thought to be directly relevant to the Interreg Programme.
27	4	Chapter 3	Another of the key issues under ecology and nature conservation and landscape is abandonment of upland farms due to an aging farming demographic which results in landscape dereliction and loss of habitat quality for those habitats that are dependent on farming. Water quality also affects habitats and species through eutrophication.	Addressed in Section 2.3 of the Environmental Report, though agriculture not thought to be directly relevant to the Interreg Programme.
28	5	Chapter 3	The key issues indicate that there is limited status of peatland. We would advise reading the Northern Ireland chapter of the National Ecosystems Assessment as this refers to some up to date research and is the best knowledge at present. http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx	Addressed in Section 2.3 of the Environmental Report.
29	5	Chapter 3	The cumulative impact of wind turbines in the landscape may be a key issue for some species and habitats. As the programme is funding renewable energy this should also be recognised within the environmental report.	Addressed in Sections 5.2, 5.3 and 6.2 of the Environmental Report.
30	5	Chapter 3	Under Green infrastructure key issues, there is a need for a coordinated planned approach regarding green infrastructure to direct funding to areas of most benefit.	Addressed in Sections 2.3, 2.4 and 6.3 of the Environmental Report.

31	5	Page 76 (Table 4.1)	Under SEA objectives we would advise the following amendments and additions: Under the sub objectives for Ecology and Nature conservation – b. take priority habitats out of this objective; d. change this to maintain and enhance priority habitats and species and e. benefit protected species as this separates the designated sites from the wider countryside issues.	Addressed in Table 3.1 of the Environmental Report.
32	5	Page 76 (Table 4.1)	Under Air Pollution we request a specific objective: minimise nitrogen deposition on designated sites and priority habitats as this is becoming a key issues for some sensitive habitats and the programme could be a driver to increase this problem if not recognised. Under climate change we request that water and habitat resilience is also considered in the face of a changing climate. We have found wildlife fires are already becoming a problem of poor habitat resilience in uplands and water storage/wetland creation on farms should also be promoted.	Addressed in Table 3.1 of the Environmental Report.
33	5	Page 76 (Table 4.1)	The following legislation should be included as part of the scoping report and fully considered within the environmental report. <ul style="list-style-type: none"> • The Water Environment (Water Framework Directive) Regulations (Northern Ireland) 2003 (SR 2003/544) as amended. • Water Abstraction and Impoundment (Licensing) Regulations (Northern Ireland) 2006 (SR 2006/482) as amended. • Groundwater Regulations (Northern Ireland) (SR 2009/254) as amended. • The Water (Northern Ireland) Order 1999 (SI 1999/662) as amended. 	Noted.
Organisation & contact: Environmental Protection Agency, Ireland (Tadhg O'Mahony Senior Scientific Officer (SEA))				
Date received: 26 June 2013				
34	1	Section 3.12	The key issues outlined in Key Environmental and Sustainability Issues are noted. The potential for opportunities for transboundary collaboration, in relation to water bodies or water quality, biodiversity, landscape and climate that may arise as a result of implementation of the Programme should be included within the scope of the assessment. The relevant aspects of the Water Framework Directive International River Basin Management Plans should also be taken into account in the context of the potential for transboundary environmental effects.	Addressed in Appendix B and Sections 2.2, 2.4, 5.2, 5.3, 6.2 and 6.3 of the Environmental Report.
35	1	General	The Programme should take into account the potential for cumulative/ in-combination effects in the context of both the SEA Directive and the Habitats Directive - Appropriate Assessment - and relationship with other key relevant plans / programmes. In particular, the Programme should assess the potential for conflict with the objectives of the relevant Water Framework Directive River Basin Management Plans, and also consider climate change implications. Where potential conflicts/ likely significant effects are identified, suitable SEA related mitigation measures should be put in place to address such conflicts.	Addressed in Appendix B and Sections 2.2, 2.4, 5.2, 5.3, 6.2 and 6.3 of the Environmental Report. SEUPB has not commissioned ADAS to carry out Appropriate Assessment.
36	1	General	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. Consultation with the National Parks and Wildlife Service (NPWS), should be taking into consideration in this regard.	Addressed in Section 6.3 of the Environmental Report.
37	1	General	The requirements of the EU Floods Directive should be promoted and the Programme should encourage appropriate land use taking into account the potential risk of flooding identified.	Addressed in Sections 2.2, 5.2 and 6.2 of the Environmental Report.

38	1	General	<p>Programme should refer to EPA's Ireland's Environment - an Assessment 2012, which contains information on the 'Environmental Challenges and Priorities' for Ireland (Chapter 10 of report). These include:</p> <p>Environmental Goals</p> <ul style="list-style-type: none"> • Limiting and Adapting to Climate Change • Protecting Water Resources • Sustainable Use of Resources • Clean Air • Protection of Soil and Biodiversity • Integration and Enforcement <p>Environmental Challenges</p> <ul style="list-style-type: none"> • Valuing and Protecting our Natural Environment • Building a Resource-Efficient, Low Carbon Economy • Implementing Environmental Legislation • Putting the Environment at the Centre of Decision Making • Meeting the Challenges to Build a Sustainable Ireland 	Addressed in Sections 2.3 and 2.4 of the Environmental Report.
39	2	General	<p>With regard to the relationship with other plans/programmes there would be merit in taking into account a number of key national/regional level plans/programmes in the Republic of Ireland (ROI):</p> <ul style="list-style-type: none"> • Border Regional Planning Guidelines (Border Regional Authority); • Relevant aspects of County Development Plans (CDPs) of the counties within the Border Region e.g. Donegal CDP; • The Irish National Rural Development Plan, currently being updated by the Department of Agriculture, Food and the Marine; • Food Harvest 2020 (Department of Agriculture, Food and the Marine) and associated Environmental Appraisal; • The Irish Forestry Policy Review and associated SEA; • Offshore Renewable Energy Development Plan; and • Actions for Biodiversity 2011-2016 - Ireland's National Biodiversity Action Plan. 	Addressed where appropriate in Appendix B and Sections 2.2 and 5.2 of the Environmental Report.
Organisation & contact: Inland Fisheries Ireland (William Walsh, Director - Eastern River Basin District)				
Date received: 24 June 2013				
40	1	General	<p>In determining the likely significant effects of the INTERREG Programme under the SEA process, regard should be had for the need the sustainable development of inland and marine fisheries resource (including the conservation of fish and other species of fauna and flora, aquatic habitats and the biodiversity of inland and marine water ecosystems).</p>	The marine environment is addressed in Appendix B and Sections 2.3, 2.4, 5.2, 6.2 and 6.3 of the Environmental Report.

41	1	General	<p>Some key issues for consideration in the SEA include:</p> <ul style="list-style-type: none"> • Water quality; • Surface water hydrology; • Fish spawning and nursery areas; • Passage of migratory fish; • Areas of natural heritage importance including geological heritage sites; • Biological diversity; • Ecosystem structure and functioning; • Sport and commercial fishing and angling; • Amenity and recreational areas. 	Addressed where appropriate in Sections 2.3, 2.4, 5.2, 6.2 and 6.3 of the Environmental Report.
42	1	General	<p>The Border Region of Ireland contains a wealth of freshwater habitats with stocks of game and course fish. A significant proportion of our floral and faunal biodiversity resource is located outside areas under formal European designation (SAC, SPA, NHA, Ramsar). It is also important to note that while many river systems designated under the Habitats Directive, they may hold species that are designated under that directive. Atlantic salmon, for example, are listed as Annex II Species under the European Habitats Directive. The report of the Standing Scientific Committee of the National Salmon Commission "status of Irish salmon stocks in 2006 and precautionary catch advice for 2007" states that in applying the Habitats Directive consideration must be given to all of the populations and not just specifically to the 26 SAC designated rivers.</p>	Noted; habitats outside of Natura 2000 are considered in Sections 2.3, 2.4, 5.1 and 6.3 of the Environmental Report.
Organisation & contact: Historic Scotland (Andrew Stevenson, Senior Heritage Officer (SEA))				
Date received: 21 June 2013				
43	1	General	<p>I note from the report that you propose to scope the historic environment into the assessment as significant impacts in this area as a result of the programme are considered likely. In light of the information contained within the report I agree with this decision.</p>	Noted.
44	1	General	<p>I welcome the inclusion of an SEA Objective and its Sub-Objectives in relation to the historic environment and consider them suitable for the testing of the Thematic Objectives and Alternatives of the Programme. I also welcome the approach outlined in the report both in relation to the assessment of effects through a matrix system and the approach to the consideration of alternatives.</p>	Noted.
45	2	Appendix A	<p>In terms of the Review of Other Plans, Programmes and Conservation Objectives it should be noted that the relevant policy background in Scotland as it relates to the historic environment can be found in the following:</p> <ul style="list-style-type: none"> - Scottish Planning Policy (SPP) - Scottish Historic Environment Policy (SHEP) <p>In summary, the key environmental protection objective of the policy framework for the historic environment is "to protect and, where appropriate, enhance the historic environment".</p>	Updated in Section 2.2 and Appendix B of the Environmental Report.
46	2	General	<p>I note that the consultation period for the Environmental Report will be 12 weeks long. I am content with this timescale. Please note that, for administrative purposes, Historic Scotland consider that the consultation period commences on receipt of the relevant documents by the SEA secretariat.</p>	Noted.
Organisation & contact: Scottish Environment Protection Agency (Susan Dean, Principal Policy Officer, Planning Service)				
Date received: 26 June 2013				

47	1	General	We are generally content with the scope and level of detail proposed, and with the proposed assessment methodology. We are satisfied with the proposed 12 week consultation period. Our detailed comments are set out in Appendix 1 to this letter.	Noted.
48	2	General	We acknowledge that as a high-level programme identifying significant effects will be difficult. We would therefore recommend that the Responsible Authority also use the SEA to identify at what other stages more detailed assessment work should take place in order to enable some of the more generic effects likely to be identified in the SEA to be evaluated at an appropriate scale.	Noted; more detailed assessments such as EIA are mentioned in Sections 3.3, 5.2 and 6.2 of the Environmental Report.
49	2	Section 2.5	There are a number of additional documents which help to set the Scottish context and which should also be considered in this section. These include:	Addressed in Appendix B and Sections 2.2, 2.3 and 2.4 (as appropriate - see below) of the Environmental Report.
50	2	Section 2.5	Population and Human Health <ul style="list-style-type: none"> • Achieving our Potential: A Framework to tackle poverty and income inequality in Scotland (2008) • Equally well: Implementation Plan (2008) • Child Poverty Strategy for Scotland (2011) 	Updated in Appendix B and Sections 2.2, 2.3 and 2.4 of the Environmental Report.
51	2	Section 2.5	Soil and Landuse <ul style="list-style-type: none"> • Scottish Soil Framework (2009) • Getting the best from our Land: A land use strategy for Scotland (2011) 	Updated in Appendix B and Sections 2.2, 2.3 and 2.4 of the Environmental Report.
52	2	Section 2.5	Water <ul style="list-style-type: none"> • Scotland River Basin Management Plan (2009-2015) • Solway Tweed River Basin Management Plan (2009-2015) • Flood Risk Management (Scotland) Act 2009 	Updated in Appendix B and Sections 2.2, 2.3 and 2.4 of the Environmental Report.
53	2	Section 2.5	Air <ul style="list-style-type: none"> • The Air Quality Standards (Scotland) Regulations 2007 • Local Air Quality Management – Revised Policy Guidance / Review 	Updated in Appendix B and Section 2.2 of the Environmental Report.
54	2	Section 2.5	Climate Change <ul style="list-style-type: none"> • Changing Our Ways: Scotland's Climate Change Programme Delivery Plan (Scottish Government, 2009) • Scotland's Climate Change Adaptation Framework (Scottish Government, 2009) • Climate Change Adaptation Framework Sector Action Plans (Scottish Government, 2011) 	Updated in Appendix B and Sections 2.2, 2.3 and 2.4 of the Environmental Report.
55	2	Section 2.5	Material Assets <ul style="list-style-type: none"> • Low Carbon Economic Strategy for Scotland (2010) • 2020 Routemap for Renewable Energy (2011) • Environmental and Clean Technologies Action Plan (2009) • Sectoral Marine Plans for Offshore Wind, Wave and Tidal Energy (2013) • Zero Waste Plan (2011) 	Updated in Appendix B and Sections 2.2, 2.3 and 2.4 of the Environmental Report.
Organisation & contact: Scottish Natural Heritage (Ron MacDonald, Head of Policy and Advice)				
Date received: 24 June 2013				

56	1	General	We are content with the scope and level of detail proposed for the Environmental Report which is set out comprehensively in the Draft Scoping Report. Given the complexity of the Programmes, it is hard to tell at this stage what the potential impacts may be. However, the scoping report has been set out in a logical way and should identify the main issues. There are many uncertainties however as to how the final programme may be developed and implemented.	Noted.
57	1	Para 3.1.4	There is only one comment we wish to make regarding the baseline environmental information that will be gathered. We note that the data on protected areas in Scotland uses data from 2010. More up to date information is available from SNH through SNHi and the publication of our official statistic on the Proportion of Scotland's Protected Sites in Favourable Condition 2013. Other environmental data for Scotland is available through Scotland's Environment Website (SEWeb).	Updated in Sections 2.3 and 2.4 of the Environmental Report.
58	2	General	We note that a period of twelve weeks is proposed for consultation on the Environmental Report and SNH is content with this timing.	Noted.

Appendix B: Relevant Environmental Protection Objectives

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
Northern Ireland		
DARD (2012) Rural White Paper Action Plan	This document sets out the vision for NI's rural areas and the actions which Departments will take in support of achieving that vision and to help ensure the future sustainability of rural areas. The vision includes vibrant and strong rural communities; improved infrastructure, transport and key services; strong community infrastructure which can avail of economic, social and cultural opportunities; and better linkages between rural and urban areas.	The themes in INTERREG will support the vision of the white paper through the application of themes on improving jobs, local economies, and regeneration of communities economically and socially, and improving infrastructure. Added themes on environmental protection and resource efficiency will provide added benefits indirectly to rural areas.
DARD (2012) Strategic Plan 2012-2020	DARD's vision is to achieve a more efficient and competitive agri-food industry through providing ' <i>a thriving and sustainable rural economy, community and environment</i> '. The plan aims to prepare the agri-food industry for future market opportunities by safeguarding/enhancing animal, fish and plant health and animal welfare, ensuring the feed chain is protected and risks from emerging diseases are monitored. Other environmental objectives include reducing risk of flooding by maintaining defences, enhancing sustainable marine fisheries and delivering environmental enhancement through encouraging responsible management of countryside.	The INTERREG themes of environmental protection and resource efficiency support this vision the most closely. Strands include marine and coastal planning, ecosystem services, soil protection and biodiversity. Combined with the economic and innovation aspects of the programme, these themes will complement the Strategic Plan well in terms of improving countryside and marine conditions.
DARD (2012) Tackling Rural Poverty and Social Isolation	Framework aims to help the most vulnerable rural dwellers facing poverty and social inclusion, providing a great opportunity to work together in identifying measures to improve the quality of life for rural dwellers. Addressing challenges can alleviate the stresses on those most vulnerable in the society by providing projects and	INTERREG aims for increased provision of jobs, innovation, goods and services, sustainable transport as well as a range of social improvements combining infrastructure, education and training. This aligns with the aims of the DARD framework.

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	programmes that target access poverty (benefits, education, training etc), financial poverty (low incomes) and social isolation (overcoming barriers to goods and services). Also it has a direct link to the Rural White Paper Action Plan.	
DARD (2013) Greenhouse Gas Reduction Strategy and Action Plan	Overall this promotes and encourages adoption of technical efficiency to improve farm business performance and reduce greenhouse gas emissions. The strategy and action plan identifies a set of measures and actions that can be progressively implemented on-farm to better manage the climate consequences of agri-food production systems i.e. methane and nitrous oxide. In addition it is seen to complement many other sustainability, environmental and biodiversity initiatives, targets and EC Directives.	INTERREG will indirectly support this strategy and action plan, through its strands on resource efficiency and sustainable transport. The theme of carbon emission reduction will also have added benefits. Many other strands of INTERREG will be complemented by this strategy such as biodiversity, resource protection and meeting EU directives.
DARD (2010) Renewable Energy Action Plan	Aims to provide a framework which enables the agricultural and forestry sectors to exploit opportunities that the uptake of renewable energy has to offer in terms of business competitiveness, energy security and greenhouse gas mitigation. The plan focuses on assisting meeting targets for renewable energy production at a regional, national and EU level in a balanced and sustainable way.	This action plan will be directly supported by the theme of research and innovation in INTERREG. A central part of this theme revolves around renewable energy research and implementation. Other strands on carbon emission reductions and sustainability also complement the action plan.
DARD (2007) Flood Mapping Strategy for Northern Ireland	Sets out a structured programme of fluvial and coastal flood risk mapping (and associated tool development) that is based on current knowledge of the mapping requirements of the Planning Policy Statement 15 (PPS15) and the proposed EU Floods Directive. One of the vital aims is to support asset management processes which include prioritising, justifying and targeting investments in order to manage and reduce risk to the environment.	INTERREG will direct funding towards an increase in availability of land and marine mapping, so will indirectly support this strategy. Other themes of INTERREG such as environmental protection and possibly innovation and research should complement the vital aim of this strategy.

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
Defra and DOE (2012) A Climate Change Risk Assessment for Northern Ireland	The objective of the Climate Change Risk Assessment (CCRA) is to inform adaptation policy by assessing the current and future risks and opportunities posed by the impacts of climate for NI to the year 2100. The main finding is that extreme weather is still predominant among potential risks related to climate change but that other risks, such as water scarcity and species being able to track climate space, are becoming increasingly important.	INTERREG will only indirectly support any climate change adaptation policy, mainly through reducing carbon emissions, enhancing sustainability (e.g. transport), and protecting and enhancing the environment and biodiversity and the resilience thereof. The theme of research and innovation will also encourage new and improved resolutions to climate change problems through facilitating renewable energy and storage.
DETI (2012) Sustainable Energy Action Plan 2012-2015	<p>DETI set out numerous “main actions for the future” regarding renewables and other aspects of sustainable energy. Of particular relevance are the commitments to:</p> <ul style="list-style-type: none"> ▪ Contribute to the growth of the NI sustainable energy sector (through Invest NI) to 8.9% of NI GVA by 2015. ▪ Work with DOE, developers, planners and those responsible for environmental consents to ensure that the need for renewable energy to address the environmental impacts of climate change is recognised, that good quality applications are made and that clear, consistent and proportionate procedures are in place for the consenting of renewable installations. ▪ Undertake “capacity studies” (including landscape capacity study, ecological study and bird migration study, with DOE and others) in order to determine with more accuracy how much development could be accommodated in different locations across Northern Ireland before significant cumulative effects start to emerge. ▪ Develop a continuous monitoring framework (with DOE 	The action plan will be supported by the innovation and renewable energy strands of the INTERREG programme. This will contribute to the uptake and implementation of renewable energy. The environmental protection strands of INTERREG will also help to ensure the resilience of the environment and biodiversity in relation to cumulative effects of renewable energy development.

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	and others) where the key potential cumulative effects identified from the assessment are reviewed on a regular basis in response to growth of the onshore wind industry.	
DOE (2013) Draft Strategy for Marine Protected Areas in the Northern Ireland Inshore Region	Aims to protect NI's marine environment through these networks of Marine Protected Areas (MPAs) and the key purpose of the strategy is to set out how MPAs can help to protect and improve ecosystems in NI's inshore region through mainly conservation. The key objectives include establishing an ecologically coherent network of well managed MPAs, ensure NI's MPAs contribute to the wider UK network and produce appropriate protection and conservation measures for species and habitats designated 'Priority Marine Features'.	The environmental protection theme of INTERREG will support the aims of this strategy, particularly in relation to the reservation, preservation and sustainability of marine biodiversity. There may be some conflict between this theme of INTERREG and the strand on promotion of renewable energy development, including use of tidal energy.
DOE (2013) PPS2: Natural Heritage	The planning policy statement seeks to conserve, enhance and restore the region's natural heritage by meeting international, national and local responsibilities. Also it furthers the NI Executive's commitment in preserving and improving the built and natural environment as well as halting the loss of biodiversity.	The environmental protection theme of INTERREG directly supports this policy statement through strands on biodiversity, resource protection and ecosystem services. There may be some conflict between this theme and the other themes that require physical development and regeneration of areas which could have negative impacts on habitats and species.
DOE (2013) Prioritised Action Framework for Natura 2000	The framework identifies key priorities for managing the Natura 2000 network, to achieve the objectives of the EU Biodiversity Strategy 2000 and to provide an overview of how to finance them. Priorities focus on improving habitats and species that are currently in bad status depending on general measures such as agri-environmental schemes, stakeholder	The environmental protection theme of INTERREG supports this framework, particularly in relation to improving the condition of species and habitats, biodiversity and meeting EU directives. Innovation and education or training may also come up with new solutions for achieving these objectives.

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	involvement and monitoring. This enables successful management planning and implementation of conservation management measures throughout Natura 2000.	
DOE (2012) Draft Northern Ireland Marine Position Paper	NI has not yet adopted its Marine Plan; it is currently being drafted and is expected to be consulted on in Summer 2014. The Position Paper sets out the Executive's objectives for the sustainable development and protection of the marine area. Objectives of relevance include: Protection of the Marine Environment; Surface Water Management; Flood Risk Management and Drainage; Integrated Coastal Zone Management; Climate change; Coastal Change; and Protection of the historic Environment.	The INTERREG themes of environmental protection and resource efficiency support the main objectives of this draft paper, through protection of the marine environment, mapping of terrestrial and marine habitats, enhanced resilience of species and habitats, use of ecosystem services, coastal and marine planning and carbon emission reduction. The strand on production of tidal renewable energy may conflict with this if not carried out sustainably.
DOE (2012) Northern Ireland Greenhouse Gas Emissions Reduction Action Plan	This document sets out a Cross-Departmental Action Plan to tackle the established strategies together, including how Northern Ireland is and will continue to reduce its carbon footprint. Specifically how the Programme for Government target to reduce greenhouse gas emissions by 25% below 1990 levels by 2025 will be delivered.	This action plan will be supported by the INTERREG strands on carbon emission reduction, sustainable transport and renewable energy generation.
DOE (2010) PPS21: Sustainable Development in the Countryside	The aim is to manage development in the countryside in a manner which strikes a balance between the need to protect the countryside from unnecessary or inappropriate development while supporting rural communities. Objectives include managing growth in the countryside to achieve appropriate and sustainable patterns of development to meet essential needs, and conserving the landscape and natural resources of the rural area to protect it from excessive development and pollution effects.	There are different strands of INTERREG which support this policy statement in different ways. There is recognition of the need for development and restoration in certain areas to improve economic and social conditions. This is balanced with the need to conserve and enhance landscape, soil, biodiversity and water quality conditions. A joined up approach between strands will ensure appropriate solutions are implemented.

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
DOE (2006) An Integrated Coastal Zone Management Strategy for Northern Ireland 2006 – 2026	<p>Environmental protection objectives for the coast include:</p> <ul style="list-style-type: none"> ▪ establish and maintain a sustainable quality of life; ▪ maintain the distinct cultural identities, traditions and skills; ▪ maintain and enhance natural resources and the condition of designated nature conservation sites; ▪ conserve, protect and where possible enhance the estuarine and coastal environment and terrestrial ecosystems; ▪ secure a vibrant economic future through the sustainable use of the natural resources of the coastal zone; ▪ maintain the visual appeal and environmental quality of Northern Ireland's coastal landscapes and seascapes. 	<p>There are strands in INTERREG that support different objectives of this strategy e.g. improving social conditions, increasing economic viability of communities and industry sectors, maintain and restore biodiversity, habitats and species, protect landscapes and marine environment. Sustainability is a key theme running through both programmes.</p>
DOE (2006) PPS15 Planning and Flood Risk	<p>This Planning Policy Statement sets out the Department's planning policies to minimise flood risk to people, property and the environment. In terms of protecting the environment it embodies the Government's commitment to conservation and enhancement of biodiversity, and how sustainable development and use of land should take into account climate change. To do this objective involves securing and promoting the natural role of flood plains as a form of flood defence and an important environmental resource.</p>	<p>This policy statement is supported indirectly by the strand of INTERREG encouraging use of ecosystem services and improvement of habitats and river basins, however flood risk (including avoidance, mitigation and adaptation) is not mentioned in INTERREG, representing a potential conflict with proposed development and regeneration.</p>
DOE (2006) Water Framework Directive Monitoring Plans	<p>Document aims to provide an overarching framework and outline the general approach that will be adopted to monitoring Northern Ireland's aquatic environment for the years 2006 to 2007 and beyond, highlighting the drivers for the work. The main one is the obligation to meet the monitoring</p>	<p>Though INTERREG supports the improvement of performance against the WFD, it doesn't mention monitoring specifically. Investment in water quality improvement and related sectors, as well as encouraging innovative, cross border partnerships,</p>

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	requirements of the EC Water Framework Directive (WFD) (2000/06/EC), covering surface water, groundwater and hydrological monitoring proposals.	will likely improve the monitoring capability in Northern Ireland thereby benefiting this plan.
DOE (2002) Biodiversity Strategy	Aims to protect and enhance biodiversity in Northern Ireland over the period to 2016, identifying 40 habitat types as priorities for conservation action. These will be protected from development and proposals that could harm their integrity, continuity, links or ecological relationships. Proposal of a Sustainable Development Strategy will target effective protection of the environment through setting exemplary standards in the area and integrating conservation of biological diversity into policy making. A new strategy is currently being drafted.	This strategy is directly supported by the theme of environmental protection in INTERREG which includes protecting, restoring and enhancing biodiversity, habitats and species, water quality, soil protection, reducing invasive species, etc. The strategy will also be indirectly benefited by the strands on reducing carbon emissions and supporting sustainable development.
NIEA (2012) Strategic Priorities 2012-2022	The plan outlines the strategic direction over the next ten years providing more actions to promote sustainable development through controlling pollution to tackle the effects of climate change, conserving biodiversity/managing natural reserves sustaining ecosystems through protected areas (land and sea) and improving water quality. This means providing a healthy natural environment, ensuring that NI's living and working places are green, clean and protected.	Several strands of the INTERREG programme complement this plans strategic direction. The actions put forward in the plan will be supported by the directions of investment set out in INTERREG.
NIEA (2009) Neagh Bann International River Basin Management Plan	The Upper Bann is one of six major rivers that flow into Lough Neagh in the centre of NI, while the lake drains through the Lower Bann River from the north end of the Lough at Toome to the sea on the north coast of NI. The rivers flowing into Lough Neagh drain about 43% of NI, plus part of County Monaghan in the Republic of Ireland. The plan outlines the objectives for improving the current	Water quality and meeting EU directives (such as the Water Framework Directive) are complementary strands in the INTERREG programme. The strands on soil protection and biodiversity will also indirectly complement this plan. There may be some conflict between the need for development or restoration in

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	<p>condition of the water environment for the Neagh Bann River Basin District. These include achieving good status, or better, in 117 out of 270 of their surface water bodies (43%), and good ecological potential or better in 9 of their heavily modified water bodies (3%). 13 out of 14 of their groundwater bodies (93%) will be maintained at good status. These improvements in managing and protecting waterways will be achieved by 2015.</p>	<p>communities or industry and the environmental objectives set out in the plan.</p>
<p>NIEA (2009) North Eastern River Basin Management Plan</p>	<p>The North Eastern River Basin District has a land area of just over 3000km², with a further 1000km² of marine waters. It takes in large parts of Counties Antrim and Down and a small portion of County Londonderry.</p> <p>The plan outlines the objectives for improving the current condition of the water environment for the North Eastern River Basin District. These include achieving good status, or better, in 61 out of 133 of their surface water bodies (46%), and good ecological potential or better in 4 of their heavily modified water bodies (3%). 7 out of 8 of their groundwater bodies (88%) will be maintained at good status. These improvements in managing and protecting waterways will be achieved by 2015.</p>	<p>Water quality and meeting EU directives (such as the Water Framework Directive) are complementary strands in the INTERREG programme. The strands on soil protection and biodiversity will also indirectly complement this plan. There may be some conflict between the need for development or restoration in communities or industry and the environmental objectives set out in the plan.</p>
<p>NIEA (2009) North Western International River Basin Management Plan</p>	<p>The North Western river basin district covers the north west corner of the island of Ireland, but stretches across in a south easterly direction to a large extent also taking in much of the drumlin belt that stretches through many of the border counties - from south Donegal, through Leitrim, Fermanagh, Longford, Cavan, Monaghan, and onwards.</p> <p>The plan outlines the objectives for improving the current</p>	<p>Water quality and meeting EU directives (such as the Water Framework Directive) are complementary strands in the INTERREG programme. The strands on soil protection and biodiversity will also indirectly complement this plan. There may be some conflict between the need for development or restoration in</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	<p>condition of the water environment for the North Western River Basin District. These include achieving good status, or better, in 147 out of 221 of their surface water bodies (67%), and good ecological potential or better in 5 of their heavily modified water bodies (2%). 100% of their groundwater bodies will be maintained at good status. These improvements in managing and protecting waterways will be achieved by 2015.</p>	<p>communities or industry and the environmental objectives set out in the plan.</p>
<p>Northern Ireland Executive (2011) Programme for Government 2011-15</p>	<p>The document sets out five priorities, of which one is relevant to environmental protection:</p> <ul style="list-style-type: none"> ▪ Protecting Our People, the Environment and Creating Safer Communities <p>It also sets out 82 commitments, the relevant ones being:</p> <ul style="list-style-type: none"> ▪ Reform and modernise the delivery of Health and Social care. ▪ Implement a levy on single use carrier bags by 2013 and extend this to reusable bags from 1 April 2014; ▪ Continue to work towards a reduction in greenhouse gas emissions by at least 35% on 1990 levels by 2025; ▪ Encourage achievement of 20% of electricity consumption from renewable sources and 4% renewable heat by 2015; ▪ Work towards halting the loss of biodiversity by 2020; ▪ Achieve a household recycling or composting rate of 45% by the end of March 2015; ▪ Introduce and support a range of initiatives aimed at reducing fuel poverty across Northern Ireland including preventative interventions; ▪ Improve thermal efficiency of Housing Executive stock and ensure full double glazing in its properties; 	<p>Environmental protection is a key objective in INTERREG, which aligns with the relevant priority in this document. In terms of the commitments in the PfG, INTERREG strands on carbon emission reduction, sustainable transport and renewable energy generation will support these, along with the theme of environmental protection in INTERREG which includes protecting, restoring and enhancing biodiversity, habitats and species, water quality, soil protection, reducing invasive species, etc.</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> ▪ Deliver at least 30 Schemes to improve landscapes in public areas to promote private sector investment in towns and cities across Northern Ireland; ▪ Maintain a high quality of drinking water and improve compliance with waste water standards by investing £668m in water and sewerage infrastructure; ▪ Invest over £500m to promote sustainable modes of travel; ▪ Invest £7.2 million in programmes to tackle obesity; and ▪ Develop a strategic plan for the Agri-food sector. 	
Northern Ireland Executive (2010) Sustainable Development Strategy	<p>Document sets out the objectives needed to meet the need for more action towards combating climate change, protecting natural resources, enhancing the environment and providing alternative forms of energy for use/consumption. These include:</p> <ul style="list-style-type: none"> ▪ Conserve the landscape and manage it in a more sustainable way; ▪ Protect and enhance freshwater and marine environment, as well as biodiversity; ▪ Improve air quality by reducing greenhouse gas emissions, principally by promoting energy efficiency and the use of renewable energy; and ▪ Plan and prepare for climate change impacts in NI. 	<p>The objectives in INTERREG align closely with those set out in the sustainable development strategy. Investment directed by INTERREG will help to enable the actions needed to encourage sustainable development, landscape and biodiversity conservation, reduce carbon emissions, increase resource efficiency and the take up of renewable energy. These actions will also indirectly benefit the preparation for climate change impacts.</p>
OFMDFM (2013) Together: Building a United Community Strategy	<p>The Strategy sets out a vision for “a united community, based on equality of opportunity, the desirability of good relations and reconciliation - one which is strengthened by its diversity, where cultural expression is celebrated and embraced and</p>	<p>INTERREG indirectly supports this strategy through the economic and physical support of communities and their social wellbeing. Cross border initiatives and increased education/training</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	<p>where everyone can live, learn, work and socialise together, free from prejudice, hate and intolerance.”</p> <p>The Strategy outlines how Government, community and individuals will work together to build a united community and achieve change against the following key priorities:</p> <ul style="list-style-type: none"> ▪ Our children and young people; ▪ Our shared community; ▪ Our safe community; and ▪ Our cultural expression. 	<p>will indirectly help to create the environment necessary for the strategy to come to fruition.</p>
<p>SNIFFER (2007) Preparing for a Changing Climate in Northern Ireland</p>	<p>The report recommends that “adaptation is given a higher priority across all sectors and within each of the public bodies identified as being responsible for adaptation”. Potential adaptation strategies have been identified; those of most relevance are as follows:</p> <ul style="list-style-type: none"> ▪ “Education and awareness: particularly focused on the human impact on species and habitats and the scale of the likely impacts of a changing climate”; ▪ “Ensure risks and adaptation are adequately represented within long term planning for water resources... Adaptation costs can be minimised by maintaining and improving current infrastructure”; ▪ “Location and urban design actions: adaptation of infrastructure at risk, reduction of flood risk, use of green spaces and sustainable urban drainage systems”; ▪ “Historic buildings: Improved management and maintenance of current buildings, development of strategies to adapt to changing climatic conditions”; ▪ “Waste management: assess potential impacts, sites at risk and options for effective planning”; 	<p>There is some indirect support from INTERREG for the strategies put forward in this report. The enhancement of biodiversity, landscape, soil and water conditions, combined with sustainable development, renewable energy, carbon emission reduction and wider training and education would all contribute to resilience against climate change. The innovation strand may also produce novel solutions, technologies or strategies for dealing with climate change.</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> ▪ “New highway infrastructure should include additional capacity to account for climate change, including particular attention to storm drainage, culvert sizing and flow attenuation”; ▪ “Although there are limited railways in NI, links should be made with research programmes elsewhere in the UK with regards to adaptation measures such as coastal defences, flood risk and embankment stability”; ▪ “Consider adaptation in the planning of new energy infrastructure, particularly renewables infrastructure, with which there is little experience of weather impacts”. 	
Republic of Ireland		
Border Regional Authority (2010) Regional Planning Guidelines 2010-2022	<p>The key aim of the Guidelines is to provide a good quality of life for the Region’s population, through ensuring high quality residential, recreational and working environments, and improving water quality. The following is a list of those priority areas for the environment and heritage over the coming years:</p> <ul style="list-style-type: none"> ▪ the continued protection, management and enhancement of natural heritage, built heritage and environmental resources; ▪ a revised approach to policy and objective formulation structured around compliance with existing and emerging European and national legislation, including flood protection measures, biodiversity management, improving water quality status and the identification and management of coastal management zones; ▪ continued development and promotion of areas of heritage value which have importance to the Region, county or locality, including sourcing appropriate 	<p>The INTERREG programme supports some of the priority areas listed in the guidelines, namely the protection and enhancement of natural heritage and environmental resources and compliance with European directives. The innovation theme of INTERREG may also indirectly lead to novel approaches to achieving these objectives, e.g. through the marine environment. Where the objectives require development or changes to social infrastructure, there may be some conflict with the environmental protection and social inclusion parts of the programme.</p>

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	<p>resources and development of management plans, for long term and sustainable investment and monitoring;</p> <ul style="list-style-type: none"> ensuring that council boundaries do not result in fragmentation of policy implementation; re-assessment of the way in which open spaces are managed, linked and developed, and the potential for integrating additional functions in that reassessment. 	
DAHG (2011) A National Landscape Strategy for Ireland	<p>The Strategy sets out six high level objectives, of most relevance being:</p> <ul style="list-style-type: none"> To increase public awareness about landscapes, including the links between the land's resources, the layout of the landscape and the physical, economic and psychological health of its people. To facilitate the development of Landscape planning and landscape management guidance and facilitatory tools for use with Strategic Environmental Assessment, Environmental Impact Assessment and Appropriate Assessment to improve land-use policies, and forward planning and development management practices. To accommodate landscape considerations in cultural, environmental, agricultural, social, health, education, recreation, tourism, economic and transport policies and all relevant sectors of public administration. 	<p>Landscape restoration is a specific objective within INTERREG which will indirectly support the objectives of the Strategy. There may also be some indirect social benefits of this strategy for the social inclusion aspect of INTERREG.</p>
DAFM (2012) Our Ocean Wealth: An Integrated Marine Plan for Ireland	<p>The Plan aims to support an integrated system of policy and programme planning for marine affairs in Ireland. Its vision is provide a healthy ecosystem by that protecting/conserving rich marine biodiversity and ecosystems, managing the living and non-living resources in harmony with the ecosystem and implementing/complying with environmental legislation.</p>	<p>One of the specific objectives of INTERREG is the creation of collaborative approaches to marine and coastal planning; this will directly support the Integrated Marine Plan.</p>

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DCENR (2012) Strategy for Renewable Energy: 2012-2020	The strategy outlines how it is planned that sustainable power, when developed, is maximised as it is returned to the State. Five strategic goals are set out in the document; these include increasing on and offshore wind, building a sustainable bioenergy sector, fostering R&D in renewables, growing sustainable transport and building out robust and efficient networks.	The innovation, technology and research theme of INTERREG will encourage renewable energy as one of its target areas for action. This will also be indirectly supported by the resource efficiency strand that aims to reduce carbon emissions through the implementation of renewable energy.
DCENR (2010) Draft Offshore Renewable Energy Development Plan (OREDPA) for Ireland	The aim of the OREDPA is to set out scenarios for the development of up to 4,500MW from offshore wind energy and 1,500MW from wave and tidal energy in Irish waters up to 2030. Objectives include describing policy, providing information on initiatives, set out development scenarios for 2030 and set out long term vision for offshore renewable energy.	The innovation, technology and research theme of INTERREG will encourage tidal energy as one of its target areas for action, thus supporting the OREDPA directly.
DCMNR (2007) Delivering a Sustainable Energy Future for Ireland: The Energy Policy Framework 2007-2020	Sustainability is at the heart of the Government's energy policy objectives. The challenge of creating a sustainable energy future for Ireland is being met through a range of strategies, targets and actions to deliver environmentally sustainable energy supply and use. The underpinning Strategic Goals are: <ul style="list-style-type: none"> ▪ Addressing climate change by reducing energy related greenhouse gas emissions. ▪ Accelerating the growth of renewable energy sources. ▪ Promoting the sustainable use of energy in transport. ▪ Delivering an integrated approach to the sustainable development and use of bioenergy resources. ▪ Maximising Energy Efficiency and energy savings across the economy. 	There are a number of parts of INTERREG that would indirectly support this policy framework, such as research and implementation of renewable energy sources, resource efficiency and research and innovation. Therefore objectives achieved as part of INTERREG will meet the goals set out in the policy framework.

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	<ul style="list-style-type: none"> ▪ Accelerating Energy Research Development and Innovation Programmes in support of sustainable energy goals. 	
DECLG (2012) A Resource Opportunity: Waste Management Policy in Ireland	<p>This policy document sets out the measures through which Ireland will make the further progress necessary to become a recycling society, with a clear focus on resource efficiency and the virtual elimination of landfilling of municipal waste. Measures include:</p> <ul style="list-style-type: none"> ▪ The environmental protection agency, as part of its review and renewal of the national Waste prevention programme by the end of 2012, will be requested to focus on resource efficiency, prevention and reuse and the development of coordinated approaches with other state agencies. ▪ Local authorities will be required to prioritise waste prevention both in the development of new regional waste management plans and in the implementation of measures with local business and community groups. ▪ The promotion of awareness of the benefits of recycling must be a shared responsibility and actors in the producer responsibility sector will be expected to demonstrate significant commitment to awareness-raising as will local authorities, waste collection companies and the wider public sector and business community. ▪ Ireland requires an adequate network of quality waste treatment facilities. A review of recovery infrastructure will be completed by 31 December 2012 and the environmental protection agency will advise on 	<p>One of the main strands of INTERREG revolves around resource efficiency. Another relates to innovation and research. Both of these strands can be applied to waste management, thereby supporting the implementation of measures set out in the waste management policy. Some aspects of the theme on social inclusion may also indirectly support efforts to encourage recycling.</p>

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	requirements in this regard.	
DECLG (2012) National Climate Change Adaptation Framework: Building Resilience to Climate Change	<p>This framework is a first step in a longer-term process which will evolve and strengthen over time as the knowledge base evolves and as the policy response matures. The objectives are:</p> <ul style="list-style-type: none"> ▪ providing the policy context for a strategic national adaptation response to climate change; ▪ promoting dialogue and understanding of adaptation issues; ▪ identifying and promoting adaptation solutions; and ▪ committing to actions to support the adaptation process. 	The resource efficiency and research and innovation themes of INTERREG will indirectly lead to benefits in relation to dealing with climate change through better management of energy and new technologies and processes for meeting society's economic, environmental and social needs.
DECLG and Marine Institute (2012) Ireland's Marine Strategy Framework Directive Implementation	<p>The MSFD establishes a framework within which EU member states are required to take the necessary measures to achieve of maintain good environmental status in the marine environment by 2020. The main objectives of the Directive are to:</p> <ul style="list-style-type: none"> ▪ Protect and preserve the marine environment; ▪ Prevent its deterioration; ▪ Where practicable, restore marine ecosystems in areas where they have been adversely affected; ▪ Prevent and reduce inputs in the marine environment, with a view to phasing out pollution; and ▪ Ensure that there are no significant impacts on or risks to marine biodiversity, marine ecosystems, human health or legitimate uses of the sea. 	Part of the environmental protection and resource efficiency strand looks to contribute to increased attainment of EU environmental directives. Other objectives of NTERREG relate to better coastal and marine planning. These will also benefit the framework implementation.
DEHLG (2009) Guidelines for Planning Authorities	<p>The core objectives of the Guidelines are to:</p> <ul style="list-style-type: none"> ▪ Avoid inappropriate development in areas at risk of flooding; 	These guidelines are indirectly supported by the aim in INTERREG to increase attainment of EU directives relating to the environment. There may

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20: The Planning System and Flood Risk Management	<ul style="list-style-type: none"> ▪ Avoid new developments increasing flood risk elsewhere, including that which may arise from surface water run-off; ▪ Ensure effective management of residual risks for development permitted in floodplains; ▪ Avoid unnecessary restriction of national, regional or local economic and social growth; ▪ Improve the understanding of flood risk among relevant stakeholders; and ▪ Ensure that the requirements of EU and national law in relation to the natural environment and nature conservation are complied with at all stages of flood risk management. 	be some conflict between these guidelines and the objective to regenerate deprived areas if these areas already exist in areas at risk of flooding.
DEHLG (2007) Ireland National Climate Change Strategy 2007-2012	<p>The Strategy's principal measures include:</p> <ul style="list-style-type: none"> ▪ 15% of electricity to be generated from renewable sources by 2010 and 33% by 2020. ▪ Biomass to contribute up to 30% of energy input at peat stations by 2015. ▪ Support for Combined Heat and Power projects. ▪ National Ocean Energy Strategy. ▪ Modal shift to public transport as a result of Transport 21 investment. ▪ Energy efficiency measures to be funded in social housing programmes. ▪ Use of waste biomass in energy production. ▪ Support for waste-to-energy projects under REFIT scheme. ▪ Energy Efficiency Programme with target of 33% energy savings across public sector by 2020. 	The research and innovation theme in INTERREG will directly benefit the measures set out in this strategy, as long as the research is focussed on climate change and society's adaptation to it. Where measures require development of new infrastructure, there may be some conflict with environmental protection objectives in INTERREG.

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	<ul style="list-style-type: none"> ▪ €15m multi-annual Climate Change Awareness campaign. ▪ Major funding for research programmes. 	
EPA (2009) Shannon International River Basin Management Plan	<p>The Shannon International River Basin District is the largest in Ireland at more than 18,000 km² in area. It is an international RBD as a small portion of County Fermanagh in Northern Ireland drains underground to the Shannon Pot. It covers the natural drainage basin of the Shannon river itself, stretching from the source of the River Shannon in the Cuilcagh mountains in Counties Cavan and Fermanagh to the tip of the Dingle peninsula in north Kerry.</p> <p>The plan establishes four core environmental objectives to be achieved by 2015:</p> <ul style="list-style-type: none"> ▪ prevent deterioration in waterbodies currently in good ecological status; ▪ restore good status in the 57% of rivers, 55% of lakes, 35% of estuaries and 25% of groundwater bodies that are currently below this standard; ▪ reduce chemical pollution; ▪ achieve water related protected areas objectives. 	<p>Water quality and meeting EU directives (such as the Water Framework Directive) are complementary strands in the INTERREG programme. The strands on soil protection and biodiversity will also indirectly complement this plan. There may be some conflict between the need for development or restoration in communities or industry and the environmental objectives set out in the plan.</p>
NPWS (2011) Actions for Biodiversity 2011-2016 - Ireland's National Biodiversity Action Plan	<p>This plan outlines the measures Ireland will take in preparing for pressures and losses in the level of biodiversity, and they are presented as 102 actions under a series of 7 strategic objectives. The objectives cover the conservation of biodiversity in the wider countryside and in the marine environment (within and outside protected areas), mainstreaming of biodiversity across the decision making process, the strengthening of the knowledge base on biodiversity, and increasing public awareness and</p>	<p>Environmental protection, including that of biodiversity, habitat and species etc, is a key theme in INTERREG. The objectives set out in this theme are likely to reflect those set out in the biodiversity action plan. There may be conflict with the regeneration objectives in other parts of INTERREG, but there may also be opportunities during regeneration to incorporate biodiversity into</p>

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	participation.	any development.
Scotland		
Historic Scotland (2011) Scottish Historic Environment Policy	<p>The key principles set out in the document are:</p> <ul style="list-style-type: none"> ▪ Actions taken in respect of Scotland's historic environment should secure its conservation and management for the benefit and enjoyment of present and future generations; ▪ There should be a presumption in favour of preservation of individual historic assets and also the pattern of the wider historic environment; no historic asset should be lost or radically changed without adequate consideration of its significance and of all the means available to manage and conserve it; ▪ Scotland's historic environment should be managed in a sustainable way, recognising that it is a social, cultural, economic and environmental resource of great value; ▪ All of the people of Scotland should be able to enjoy, appreciate, learn from and understand Scotland's historic environment, and be assisted in that through access, research, knowledge, information and education and proactive conservation investment, without compromise to cultural significance. 	<p>There is no specific mention of heritage assets in INTERREG, though asset conservation may benefit from some biodiversity and landscape protection. The objectives relating to social inclusion and regeneration may also provide indirect benefits should a cultural heritage asset be considered a focus for such actions.</p>
Marine Scotland and Scottish Government (2013) Blue Seas - Green Energy: A Sectoral Marine Plan for Offshore Wind	<p>The Plan is based on strategic aims which are applicable across its geographical scope. Those of relevance include:</p> <ul style="list-style-type: none"> ▪ Maximise the contribution that offshore wind energy makes to renewable energy generation in Scotland; ▪ Minimise adverse effects on people, other economic sectors and the environment; and 	<p>This plan is indirectly supported by the objectives relating to innovation and research on renewable energy. There are also indirect benefits from the environmental protection objectives in INTERREG.</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
Energy in Scottish Territorial Waters	<ul style="list-style-type: none"> ▪ Deliver offshore wind while complementing other forms of marine energy generation. 	
Scottish Enterprise, HIE, Scottish Funding Council and SEPA (2009) Environmental and Clean Technologies Action Plan	<p>Key deliverables are:</p> <ol style="list-style-type: none"> 1. Establish the necessary partnership framework to manage, develop and deliver Scotland's ECT Strategy. 2. Map out existing partnerships, projects, support organisations and secured/available sources of funding for ECT projects in Scotland to improve understanding of the scale and nature of Environmental and Low Carbon activities across Scotland. This will inform the long term strategy evidence base and identify areas of good practice and unnecessary duplication of effort. 3. Identify and consider the options to develop an inter-agency workflow management system to facilitate improved partnership working and the flow of essential sector development information and knowledge transfer. 4. Map out existing industry sector/public agency information and support portals and either integrate with or create a specific Scottish ECT web portal to act as a "one-stop-shop" for all stakeholders to support the establishment of new partnerships and projects, transfer of knowledge and advice, source funding opportunities and learn from other Scottish, UK and International experiences. 5. Publish an ECT Communications Plan to ensure consistent and understandable messages to stakeholders, and co-ordinated methods for ongoing promotion, awareness raising, training and capacity 	<p>This plan is directly supported by the research and innovations strand in INTERREG, which has objectives that will put in place the necessary partnerships and innovations to achieve the deliverables set out in the action plan. There will be indirect benefits from the social inclusion themes in INTERREG as this will allow more people to be in a position where they can contribute to research or innovation such as that strived for in the action plan.</p>

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	<p>building.</p> <p>6. Publish a long term approach to establishing an ECT industry in Scotland, identifying the long term Economic, Environmental and Knowledge-Base outcomes for delivery and indicators for success, and secure the necessary resources for delivery.</p>	
<p>Scottish Government (2013) Planning Scotland's Seas: Possible Nature Conservation Marine Protected Areas Consultation Overview</p>	<p>The document states "We are developing Nature Conservation MPAs in Scotland to either protect a range of biodiversity or geodiversity features in their current state for the future, or to allow them to recover to the state they should be to remain healthy and productive. The benefits our seas provide are not limited to the natural environment; Historic MPAs can also add to the protection of Scotland's outstanding marine cultural heritage... The key overall objective of the MPA network is to safeguard our most important natural and cultural heritage features in Scottish waters based on the principle of sustainable use."</p>	<p>This overview will be indirectly supported by the environmental protection themes in INTERREG, particularly the marine and coastal planning objectives. There may be some conflict with renewable energy strands of INTERREG where natural heritage assets may come second to the need for marine energy infrastructure.</p>
<p>Scottish Government (2013) Scottish Planning Policy: Consultation Draft</p>	<p>There are three main ways in which planning policy seeks to positively shape the future of Scotland – these outcomes are as follows:</p> <ul style="list-style-type: none"> ▪ Planning improves quality of life by helping to create well-designed sustainable places for Scotland's people. ▪ Planning protects and enhances Scotland's built and natural environments as valued national assets. ▪ Planning supports sustainable economic growth and the transition to a low carbon economy. <p>SPP will contribute by (amongst others):</p> <ul style="list-style-type: none"> ▪ Promoting sustainable economic growth; 	<p>Many aspects of this policy would be supported by INTERREG, particularly regeneration of deprived areas, protection of natural heritage and the environment, research and innovation especially relating to low carbon technologies, environmental mapping and planning and reducing carbon emissions. The research and innovation theme is perhaps the most versatile in that it could produce solutions for any outcome required by the planning policy.</p>

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	<ul style="list-style-type: none"> ▪ Enabling sustainable development; ▪ Supporting effective engagement; ▪ Tackling climate change; ▪ Creating places of quality; ▪ Ensuring new development is well located; ▪ Valuing the historic environment; ▪ Valuing the natural environment; ▪ Enhancing green infrastructure; ▪ Promoting sustainable and active travel; ▪ Managing flood risk and drainage; ▪ Reducing and managing waste. 	
<p>Scottish Government (2011) 2020 Routemap for Renewable Energy in Scotland</p>	<p>Targets include:</p> <ul style="list-style-type: none"> ▪ 100% electricity demand equivalent from renewables by 2020; ▪ 11% heat demand from renewables by 2020; ▪ New target of at least 30% overall energy demand from renewables by 2020; and ▪ New target of 500 MW community and locally-owned renewable energy by 2020. 	<p>The targets in this roadmap will be supported by the research and innovation theme of INTERREG. Other areas of the programme, such as regeneration of deprived communities may also provide opportunities for the implementation of renewable energy thereby contributing to these targets.</p>
<p>Scottish Government (2011) Getting the best from our Land: A land use strategy for Scotland</p>	<p>The Principles below reflect Government policies on the priorities which should inform land use choices across Scotland:</p> <ol style="list-style-type: none"> a) Opportunities for land use to deliver multiple benefits should be encouraged. b) Regulation should continue to protect essential public interests whilst placing as light a burden on businesses as is consistent with achieving its purpose. Incentives should be efficient and cost-effective. 	<p>Many aspects of INTERREG feed into this strategy. It requires research on land use and requirements from land by society, met by the research and innovation theme. There is also requirement for proactive and positive management of the environment and landscape which is further supported by the environmental protection objectives. Regeneration of urban and rural communities should address the issue of derelict or vacant land as set out in the social</p>

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	<ul style="list-style-type: none"> c) Where land is highly suitable for a primary use (for example food production, flood management, water catchment management and carbon storage) this value should be recognised in decision-making. d) Land use decisions should be informed by an understanding of the functioning of the ecosystems which they affect in order to maintain the benefits of the ecosystem services which they provide. e) Landscape change should be managed positively and sympathetically, considering the implications of change at a scale appropriate to the landscape in question, given that all Scotland's landscapes are important to our sense of identity and to our individual and social wellbeing. f) Land use decisions should be informed by an understanding of the opportunities and threats brought about by the changing climate. Greenhouse gas emissions associated with land use should be reduced and land should continue to contribute to delivering climate change adaptation and mitigation objectives. g) Where land has ceased to fulfil a useful function because it is derelict or vacant, this represents a significant loss of economic potential and amenity for the community concerned. It should be a priority to examine options for restoring all such land to economically, socially or environmentally productive uses. h) Outdoor recreation opportunities and public access to land should be encouraged, along with the provision of accessible green space close to where people live, 	inclusion theme.

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	<p>given their importance for health and wellbeing.</p> <ul style="list-style-type: none"> i) People should have opportunities to contribute to debates and decisions about land use and management decisions which affect their lives and their future. j) Opportunities to broaden our understanding of the links between land use and daily living should be encouraged. 	
<p>Scottish Government (2011) Scotland's Climate Change Adaptation Framework and Sector Action Plans</p>	<p>In developing the Sector Action Plans, the following six adaptation principles were taken into account, to help ensure that action taken forward is sustainable and coherent:</p> <ul style="list-style-type: none"> ▪ Adaptation must be addressed alongside actions to reduce emissions. ▪ Adaptation should build broader resilience, such as through an ecosystem approach. ▪ Adaptation should be informed by a cycle of review and action. ▪ Adaptation should be integrated into existing development and implementation practices. ▪ Adaptation should be integrated at an appropriate scale. ▪ Adaptation should seek to be developed in partnership with interested parties and avoid restricting others from adapting. <p>Climate change is not an issue that governments can address in isolation. Ensuring long-term sustainability against a background of a changing climate will depend on organisations, businesses and communities across Scotland accepting responsibility and preparing for the changing</p>	<p>INTERREG will indirectly support these action plans through the application of both its research and innovation thread and the environmental protection and resource efficiency threads. As described in the action plan, actions will need to be integrated into long term sustainability and cannot be conducted in isolation. The theme of sustainability runs through both these documents.</p>

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	climate. This is why the actions in this Action Plan are not just for the Scottish Government, but also extend to a number of other public bodies.	
Scottish Government (2011) Scotland's Zero Waste Plan	<p>A zero waste Scotland will:</p> <ul style="list-style-type: none"> ▪ Be where everyone – individuals, the public and business sectors - appreciates the environmental, social and economic value of resources, and how they can play their part in using resources efficiently; ▪ Reduce Scotland's impact on the environment, both locally and globally, by minimising the unnecessary use of primary materials, reusing resources where possible, and recycling and recovering value from materials when they reach the end of their life; ▪ Help to achieve the targets set in the Climate Change (Scotland) Act 2009 of reducing Scotland's greenhouse gas emissions by 42% by 2020 and 80% by 2050; ▪ Contribute to sustainable economic growth by seizing the economic and environmental business and job opportunities of a zero waste approach. 	INTERREG may support better waste management on a few fronts: research into better waste management solutions, attaining more EU directives (such as those on waste) and investing in the waste sector to meet environmental requirements.
Scottish Government (2009) Climate Change Programme Delivery Plan: Meeting Scotland's Statutory Climate Change Targets	<p>The four transformational outcomes which the Scottish Government is working towards are:</p> <ul style="list-style-type: none"> ▪ A largely de-carbonised electricity generation sector by 2030, primarily using renewable sources for electricity generation with other electricity generation from fossil fuelled plants utilising carbon capture and storage. ▪ A largely de-carbonised heat sector by 2050 with significant progress by 2030 through a combination of reduced demand and energy efficiency, together with a massive increase in the use of renewable or low carbon 	There are two main strands of INTERREG which support this delivery plan: reduction of carbon emissions (such as through continued implementation of renewable energy) and the investment in research on low carbon technologies. Development opportunities through regeneration of deprived areas will allow for implementation of low carbon, resource efficient processes and approaches such as increased use of public transport.

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	<p>heating.</p> <ul style="list-style-type: none"> ▪ Almost complete decarbonisation of road transport by 2050 with significant progress by 2030 through wholesale adoption of electric cars and vans, and significant decarbonisation of rail by 2050. ▪ A comprehensive approach to ensure that carbon (including the cost of carbon) is fully factored into strategic and local decisions about rural land use through: appropriate protection for Scotland's carbon rich soils; minimising emissions from agricultural and other land use businesses; encouraging the sequestration of carbon, for example, through woodland planting; and the use of natural resources to generate renewable energy. 	
<p>Scottish Government (2009) Local Air Quality Management – Revised Policy Guidance</p>	<p>The Scottish Government considers it particularly important that climate change and air quality policies are properly integrated. There will be situations where policies to reduce greenhouse gas emissions will have benefits for air quality, and vice-versa; such situations should be fully exploited. The Scottish Government therefore expects local authorities to consider the impact on greenhouse gas emissions of the measures they propose to implement in their air quality action plans and in any local air quality strategies. Authorities might also wish to consider including policies to reduce greenhouse gas emissions in their local air quality strategies.</p>	<p>Air quality is not specifically included in INTERREG, but there will be indirect benefits of the implementation of INTERREG on air quality, such as the reduction of greenhouse gas emissions through the implementation of renewable technologies and improved environmental management and protection.</p>
<p>Scottish Government (2009) The Scottish Soil Framework</p>	<p>The Framework identifies a wide range of activities that will contribute to 13 soil outcomes:</p> <ol style="list-style-type: none"> 1. Soil organic matter stock protected and enhanced where appropriate; 	<p>INTERREG specifically states that investment will make a contribution to the protection and enhancement of soil, so directly supports the framework in this way. The framework will also be</p>

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	<ol style="list-style-type: none"> 2. Soil erosion reduced and where possible remediated; 3. Soil structure maintained; 4. Greenhouse gas emission from soils reduced to optimum balance; 5. Soil biodiversity, as well as above ground biodiversity, protected; 6. Soils making a positive contribution to sustainable flood management; 7. Water quality enhanced through improved soil management; 8. Soil's productive capacity to produce food, timber and other biomass maintained and enhanced; 9. Soil contamination reduced; 10. Reduced pressure on soils by using brownfield sites in preference to Greenfield; 11. Soils with significant historical and cultural features protected; 12. Knowledge and understanding of soils enhanced, evidence base for policy review and development strengthened; 13. Effective coordination of all stakeholders' roles, responsibilities and actions. 	<p>indirectly contributed to by the research and innovation theme, where this is focussed on soils, and the biodiversity protection objective. The outcomes interrelate to a number of other plans and programmes, leading to multiple benefits from each aspect of INTERREG's application in support of this framework.</p>
<p>Scottish Government (2009) Scotland River Basin Management Plan 2009-2015</p>	<p>The overall goal of this plan is for 98% of water bodies to be in good or better condition by 2027. To achieve that, water bodies currently at good or high status will be protected from deterioration and action will be taken to enhance and restore others.</p> <p>Action on most of the significant pressures will be secured through the Water Environment (Controlled Activities)</p>	<p>Water quality and meeting EU directives (such as the Water Framework Directive) are complementary strands in the INTERREG programme. The strands on soil protection and biodiversity will also indirectly complement this plan. There may be some conflict between the need for development or restoration in</p>

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	<p>(Scotland) Regulations 2005. Among other things, these regulations apply to:</p> <ul style="list-style-type: none"> ▪ activities liable to cause water pollution; ▪ water abstraction; ▪ water impoundment; ▪ new engineering alterations to the beds, banks and shores of rivers and lochs. <p>Anyone carrying out such an activity will be required by SEPA to take appropriate, proportionate and timely action to protect and improve the water environment as conditions of the activity's authorisation.</p>	<p>communities or industry and the environmental objectives set out in the plan.</p>
<p>Scottish Government (2008) Achieving our Potential: A Framework to tackle poverty and income inequality in Scotland</p>	<p>Responding to longer-term drivers of poverty, the Scottish Government, Local Government and their partners need to take an approach which includes the following:</p> <ul style="list-style-type: none"> ▪ Support the six Urban Regeneration Companies (URC) throughout Scotland to help transform our most deprived areas, and to lead improvements in employability, educational attainment, community safety and health in those areas. ▪ Make regenerated areas attractive to inward investment and other business opportunities. ▪ Energy companies have agreed to work with the Government on providing a package of insulation measures, funded under Carbon Emissions Reduction Target, to fuel poor households, and the Government will fund enhanced energy efficiency improvements to those households hardest hit by higher fuel bills. 	<p>One of the main themes of INTERREG is social inclusion and combating poverty. The objectives are closely aligned with those in this framework. There will also be some indirect benefits from the research and innovation theme, where new partnerships, markets or businesses will increase employment opportunities.</p>
<p>Scottish Government (2008) Equally well:</p>	<p>Key principles of relevance include:</p>	<p>Partly supported by the social inclusion and combating poverty theme of INTERREG, where</p>

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Implementation Plan	<ul style="list-style-type: none"> Improving the whole range of circumstances and environments that offer opportunities to improve people's life circumstances and hence their health. Reducing people's exposure to factors in the physical social environment that cause stress, are damaging to health and wellbeing, and lead to health inequalities. <p>Proposed outcomes include:</p> <ul style="list-style-type: none"> Children have more active lifestyles, access to greenspace and opportunities for play. More volunteering. Increased use of green space and more physical activity Greater satisfaction with public services and local neighbourhoods. Greater uptake of positive activities for young people. 	improved health of communities experiencing inequality is a key objective. Increased opportunities for those in deprived areas will have knock on benefits for health and welfare (e.g. reducing stress from financial worries).
Scottish Government and Environment Agency (2009) Solway Tweed River Basin Management Plan 2009-2015	<p>The overall aim of this plan is for 92% of the water bodies in the Solway Tweed river basin district to be in good condition by 2027 (currently 49% of the water bodies are at good condition). Preventing the condition of water bodies from deteriorating is an important aim of this river basin management plan.</p> <p>Where the work of a public body affects a river basin district, that body has a general duty to have regard to the river basin management plan. In such cases the agencies will work with these organisations to:</p> <ul style="list-style-type: none"> Develop good links between river basin planning and other relevant plans and strategies, especially where those plans have a statutory basis such as the Regional Spatial Strategies in England; Encourage them to include the Water Framework 	Water quality and meeting EU directives (such as the Water Framework Directive) are complementary strands in the INTERREG programme. The strands on soil protection and biodiversity will also indirectly complement this plan. There may be some conflict between the need for development or restoration in communities or industry and the environmental objectives set out in the plan.

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	Directive considerations in their plans, policies, guidance, appraisal systems and casework decisions.	
<p>Scottish Government, SEPA, HIE and Scottish Enterprise (2010) A Low Carbon Economic Strategy for Scotland</p>	<p>Strategic objectives include:</p> <ol style="list-style-type: none"> 1. Use resources more efficiently, proactively adapting to climate change impacts and adopting sustainable business practices. 2. Exploit low carbon business opportunities to accelerate industry growth, build low carbon supply chains, diversify into new markets and technologies and promote long-term ambition and resilience. 3. Capitalise on natural advantages, natural environment and the expertise of leading researchers. 4. Refocus and reprioritise innovation support going forward. 5. Attract long-term finance and secure investment in the Scottish energy sector. 6. Ensure delivery of the clean, affordable and secure electricity supply required to meet climate change targets. 7. Reduce carbon emissions through all phases of the building process. 8. Exploit and integrate low carbon building technologies into the design and construction process. 9. Encourage development of walkable, well-connected places. 10. Promote development which reduces the need to travel, facilitates travel by public transport and freight movement by rail or water. 11. Widen travel choices. 12. Encourage both energy efficient driving and supply 	<p>The push towards a low carbon economy will be supported by various parts of INTERREG, such as research into renewable energy, increased opportunities for its implementation in the regeneration of deprived areas, environmental protection, resource efficiency, improved health and employability in deprived areas, sustainable transport initiatives etc. The theme of sustainable development will be key in the implementation of both programmes.</p>

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	<p>chains.</p> <p>13. Encourage industry to develop and take up sustainable technologies.</p> <p>14. Set a policy and regulatory framework to protect the environment and available natural resources.</p>	
SEPA and Scottish Government (2012) Flood Risk Management Planning in Scotland: Arrangements for 2012 – 2016	<p>The following outcomes underpin the new approach to Flood Risk Management:</p> <ul style="list-style-type: none"> ▪ A reduction in the number of people, homes and properties at risk of flooding as a result of public funds being invested in actions that protect the most vulnerable and those areas at greatest risk of flooding; ▪ Rural and urban landscapes with space to store and slow down the progress of floods; ▪ Integrated drainage that decreases burdens on our sewer systems while also delivering reduced flood risk and an improved water environment; ▪ A well-informed public who understand flood risk and adopt actions to protect themselves, their property or their businesses, and; ▪ Flood management actions undertaken that will stand the test of time and be adaptable to future changes in the climate. 	<p>Flood risk is not specifically mentioned in INTERREG but there may be indirect benefits through better environmental management and protection (especially of soil and water) and through research and innovation in relation to flood mitigation technologies or development processes. Achievements related to integrated river basin management may also have a knock on benefit in relation to managing flood risk.</p>
UK		
Defra, Scottish Government, Welsh Assembly Government and DOE (2010) Air Pollution: Action in a Changing Climate	<p>Further action needed to meet current air quality limits for PM10 and NO2 includes:</p> <ul style="list-style-type: none"> ▪ Accelerating clean technologies – including retrofitment, low emission vehicles, buildings efficiency, euro emission standards etc.; ▪ Encouraging further behavioural changes – including 	<p>Air quality is not specifically included in INTERREG, but there will be indirect benefits of the implementation of INTERREG on air quality, such as the reduction of greenhouse gas emissions through the implementation of renewable technologies and improved</p>

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	<p>modal shift, traffic management, safer driving, cycling, walking;</p> <ul style="list-style-type: none"> ▪ Local measures and delivery including parking controls, bus management arrangements, strengthening local air quality delivery; ▪ Strategic options such as Low Emission Zones, local transport planning and very low carbon vehicles. <p>Beyond this, we will be working across the UK Government and with the devolved administrations to ensure that agreed methodologies for assessing the costs and benefits to air quality are built into the evaluation of climate change impacts of policies.</p>	<p>environmental management and protection.</p>
<p>Defra, Scottish Executive, Welsh Assembly Government and DOE (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland</p>	<p>The strategy sets out a way forward for work and planning on air quality issues; sets out the air quality standards and objectives to be achieved; introduces a new policy framework for tackling fine particles; and identifies potential new national policy measures which modelling indicates could give further health benefits and move closer towards meeting the Strategy's objectives.</p>	<p>Air quality is not specifically included in INTERREG, but there will be indirect benefits of the implementation of INTERREG on air quality, such as the reduction of greenhouse gas emissions through the implementation of renewable technologies and improved environmental management and protection.</p>
<p>HM Government, Northern Ireland Executive, Scottish Government and Welsh Assembly Government (2011) UK Marine Policy Statement</p>	<p>The MPS will facilitate and support the formulation of Marine Plans, ensuring that marine resources are used in a sustainable way in line with the high level marine objectives. Those related to environmental protection include:</p> <ul style="list-style-type: none"> ▪ Enable the UK's move towards a low-carbon economy, in order to mitigate the causes of climate change and ocean acidification and adapt to their effects; ▪ Ensure a sustainable marine environment which promotes healthy, functioning marine ecosystems and 	<p>The marine environment is mentioned throughout INTERREG. The objectives in relation to protecting and sustainably exploiting marine resources will align with those in the strategy. Research and investment will be focussed on marine renewable energy. Environmental protection objectives include the restoration, preservation and sustainability of marine biodiversity.</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	<p>protects marine habitats, species and our heritage assets; and</p> <ul style="list-style-type: none"> Contribute to the societal benefits of the marine area, including the sustainable use of marine resources to address local social and economic issues. 	
HMSO (2005) Sustainable Development Strategy	<p>The strategy for sustainable development, in the environmental dimension aims to confront the greatest threat of climate change by moving to a form of low-carbon energy consumption reducing carbon emissions by 60% 2050. Also it aims to protect natural resources and enhance the environment through such actions as understanding the environmental limits and incentivising farmers to deliver environmental benefits.</p>	<p>The research and innovation theme of INTERREG will most likely benefit this strategy by supporting the transition to low carbon technologies through research and business implementation. The protection of natural resources will also be supported by the objectives on environmental protection and resource efficiency.</p>
IHPC (2010) Review of Local Air Quality Management: A report to Defra and the devolved administrations	<p>The report suggests there is scope to enhance action plan delivery by improving the links between air quality and other policy areas, and by communicating clearer messages about what needs to be done and why. In the absence of clarity about what is expected of LAQM, the report suggests a 'proactive' model where local authorities additionally have a decisive part to play alongside central government in driving through measures to secure compliance with national and EU target levels.</p> <p>Most urban centres in the UK contain a number of locations experiencing levels of pollution which are above objective levels, and many of the 'local' solutions lie in land-use and transport planning measures which need to be applied not just in a small area around the 'hotspot' but across the district/</p>	<p>Air quality is not specifically included in INTERREG, but there will be indirect benefits of the implementation of INTERREG on air quality, such as the reduction of greenhouse gas emissions through the implementation of renewable technologies and improved environmental management and protection. The encouragement of sustainable transport initiatives included in the objective on social inclusion is likely to have the biggest impact on local air quality management.</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	borough area and beyond. Links with other policy areas also need to be improved, such as health and climate change.	
Europe		
EC (2013) Action Plan for a Maritime Strategy in the Atlantic Area	<p>The strategy for the Atlantic covers coastal, territorial and jurisdictional waters of five EU Member States and focuses on:</p> <ul style="list-style-type: none"> ▪ Managing human activities that must deliver a healthy and productive ecosystem, through developing fisheries and aquaculture but also forecasting future change in oceanic circulation and climate; ▪ Reducing Europe's carbon footprint through climate change mitigation, for example expansion of offshore wind farms and tidal technology in the Atlantic, but also changes in maritime transport will contribute to carbon reduction; ▪ Developing the sustainable exploitation of the Atlantic's seafloor natural resources; and ▪ Prepare for threats and emergencies in the Atlantic whether caused by accidents, natural disasters or criminal activity such as oil spills. 	<p>The marine environment is mentioned throughout INTERREG. The objectives in relation to protecting and sustainably exploiting marine resources will align with those in the strategy. Research and investment will be focussed on marine renewable energy. Environmental protection objectives include the restoration, preservation and sustainability of marine biodiversity. A collaborative approach is encouraged in relation to marine planning which can be implemented on a Europe wide scale. In addition, INTERREG wants to increase attainment of EU directives such as the Marine Strategy Framework Directive.</p>
EC (2013) Adaptation Strategy	<p>The overall aim is to enhance the preparedness and capacity to respond to the impacts of climate change at local, regional, national and EU levels, developing a coherent approach and improving coordination e.g. between national adaptation strategies and national risk management plans. Priority will be given to adaptation flagship projects that address key cross-sectoral, trans-regional and/or cross-border issues. Projects with demonstration and transferability potential will be</p>	<p>Adaptation to climate change and cross-border cooperation are both supported by INTERREG, predominantly through the research, development and innovation objective. Green infrastructure and ecosystem services are also promoted in the environmental protection and resource efficiency objective.</p>

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	encouraged, as will green infrastructure and ecosystem-based approaches to adaptation, and projects aiming to promote innovative adaptation technologies.	
EC (2011) Biodiversity Strategy	Strategy is designed to halt the loss of biodiversity, restore ecosystems so far as feasible, and step up efforts to avert global degradation of ecosystem services in the EU by 2020. It also aims to speed up the EU's transition towards a resource efficient and green economy. These targets can be achieved through a number of strategic objectives including ecosystem based approaches to climate change mitigation and adaptation, conserving and enhancing natural resources using them in a sustainable way, and nature based innovation restoring ecosystems and conserving biodiversity.	This strategy is directly supported through the environmental protection and resource efficiency objective. Protection and improvement of biodiversity and utilisation of ecosystems to adapt to climate change are encouraged. The innovation objectives may also indirectly contribute through research and development into novel ways of restoring ecosystems and conserving biodiversity.
EC (2010) Europe 2020 Economic Strategy	Outlines the European Union's ten-year growth strategy and in terms of environmental protection addresses the need to promote a more resource efficient, greener and more competitive economy. In particular it aims to meet the 20/20/20 climate/energy targets through reducing greenhouse gas emissions by at least 20% compared to 1990 levels or by 30% if conditions are right and increasing the share of renewable energy sources in final energy consumption to 20% also raising energy efficiency by the same amount.	This strategy will be indirectly supported by a number of objectives in INTERREG. Innovation and research are being focussed towards commercial applications which will drive the economy. This combined with the environmental protection and resource efficiency objectives will help to deliver an economy better able to adapt to climate change through resilient environmental resources.
EC (2009) Sustainable Development Strategy	A framework for a long-term vision of sustainability in which economic growth, social cohesion and environmental protection go hand in hand and are mutually supporting. Particular environmental protection objectives include increasing the use of clean energy and natural resources to combat climate change, reducing noise and air pollution	Though not specifically an objective in INTERREG, the principles of sustainable development are included throughout. Better use of natural resources, research and investment in low carbon technologies, protection of environmental resources such as water, air and soil and the

Plan or Programme	Relevant Environmental Protection Objectives within the Plan or Programme	How the INTERREG V Programme will support these Environmental Protection Objectives
	through promotion of sustainable transport, and conserving and managing the overall use of water and air.	promotion of sustainable transport are all objectives in INTERREG, thereby aligning with and supporting this strategy.
EC (2007) EU Floods Directive	Directive aims is to reduce and manage risks that floods pose to human health, the environment, cultural heritage and economic activity. This involves identifying the relevant river basins and associated coastal areas at risk of flooding, drawing up flood maps and establishing flood risk management plans focused on prevention, protection and preparedness between 2011 and 2015.	Flood risk is not specifically mentioned in INTERREG but there may be indirect benefits through better environmental management and protection (especially of soil and water) and through research and innovation in relation to flood mitigation technologies or development processes. Achievements related to integrated river basin management may also have a knock on benefit in relation to managing flood risk. Technology for better mapping of land based and coastal environments is also encouraged by INTERREG.

Appendix C: Environmental Baseline Maps

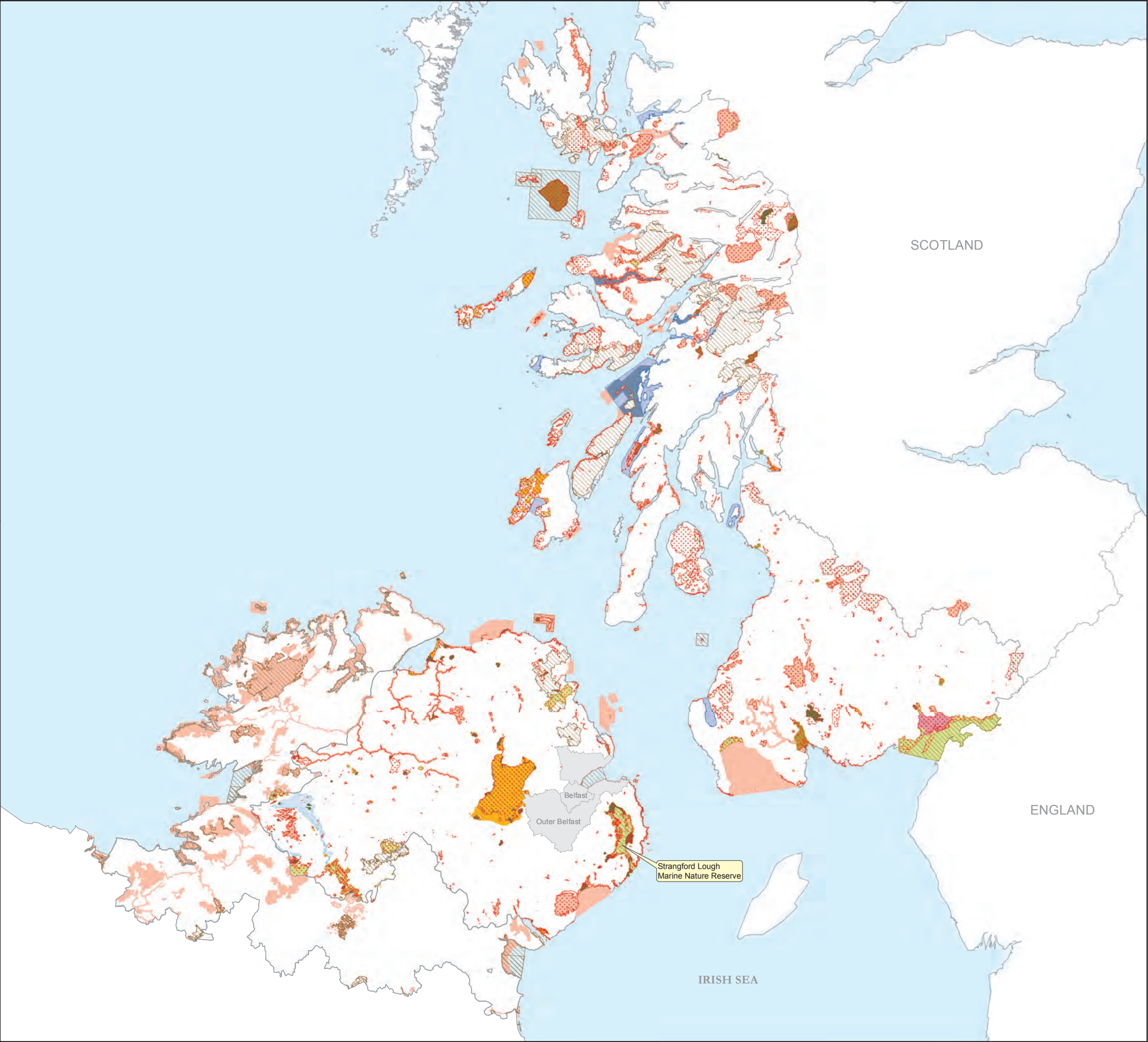
See insert.

Statutory Designations - Nature Conservation Sites

Overall Deprivation Rankings

Statutory Designations - Landscape & Cultural Heritage Sites

Access and Sustainable Transport

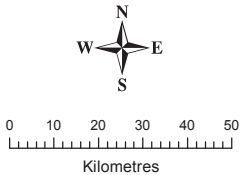


**SEA of the EU Programme for Cross
Border Co-Operation (INTERREG V)**

**Statutory Designations -
Nature Conservation Sites**

- SPA)
SAC) Natura 2000 Sites
- Ramsar
- Ramsar & SAC
- ASSI (NI) / SSSI (Scotland)
- NNR
- Ramsar & SAC & NNR
- SAC & NNR
- MCA & SAC
- LNR
- Marine Consultation Area (MCA)

Drawn by P. Taylor 13/05/2013, Verified by H. Davies 13/05/2013



Scale 1:1,700,000 at A3 size

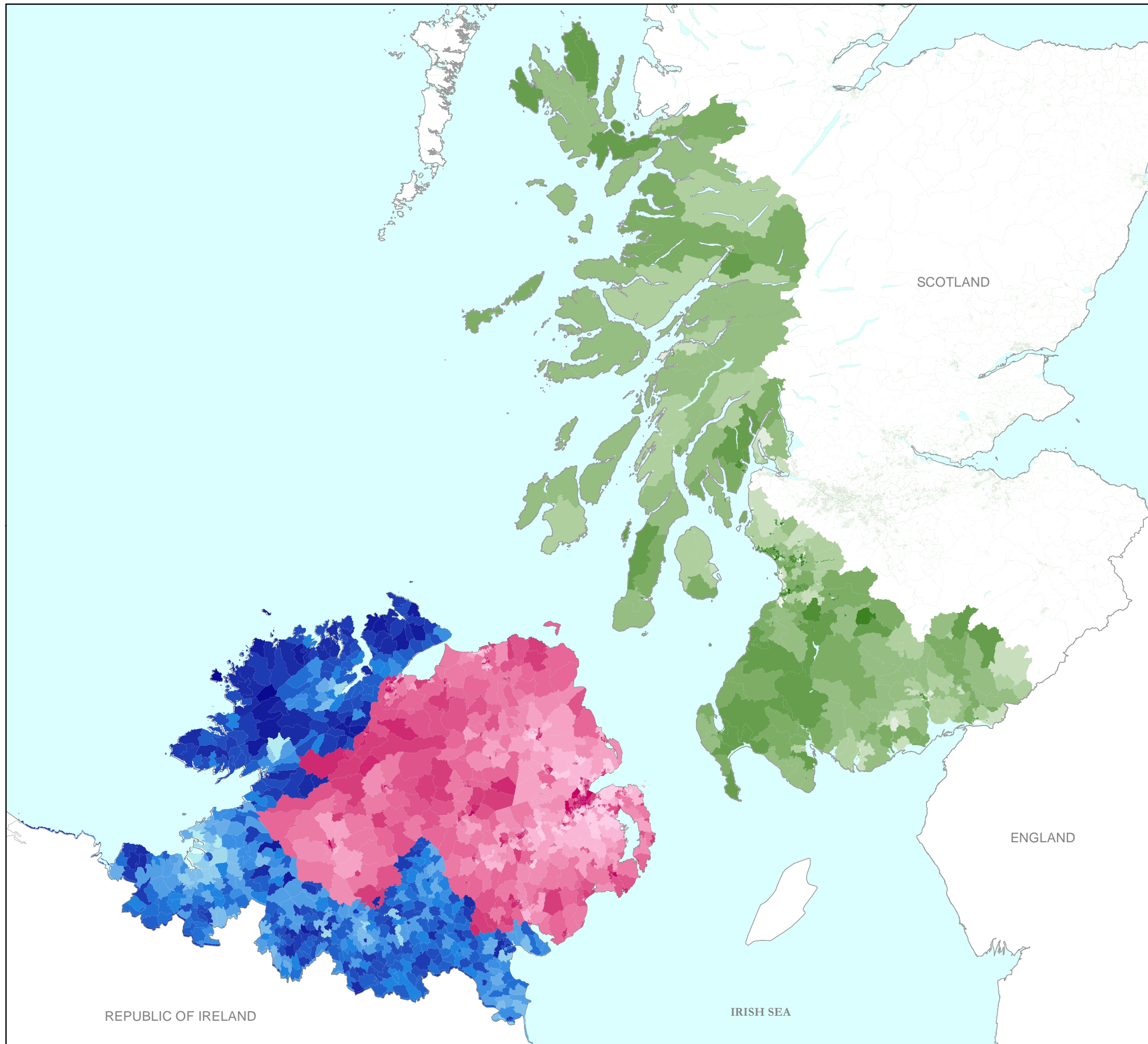
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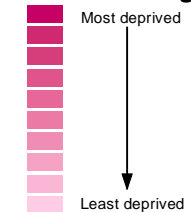


SEA of the EU Programme for Cross Border Co-Operation (INTERREG V)

Overall Deprivation Rankings for Northern Ireland, the Republic of Ireland (borders) and Scotland (west)

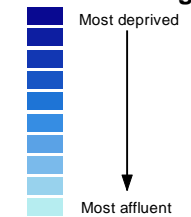
Multiple Deprivation Measure (NI)

2010 Ranking (by Super Output Area)



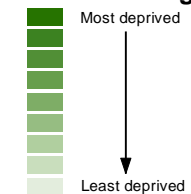
Relative Deprivation and Affluence (ROI)

2011 Ranking (by generalised Electoral Division)



Scottish Index of Multiple Deprivation

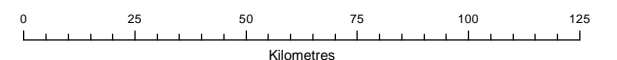
2012 Ranking (by data zone)



Notes:

1. ROI data based on the 2011 Pobal HP Deprivation Index (Relative HP Index Score) for Small Areas, output to generalised Electoral Divisions. Score based on entire ROI dataset.
2. Scotland data based on Scottish Indices of Multiple Deprivation for 2012 (overall SIMD ranking). Score based on entire Scottish dataset.
3. NI data based on Northern Ireland Multiple Deprivation Measure 2010 data (most to least deprived areas by decile) for Super Output Areas.
4. Data for illustrative purposes only and should not be used to compare deprivation between NI, ROI and Scotland.

Drawn by Hayley Coristine 27/08/2013 Verified by Helen Davies 27/08/2013

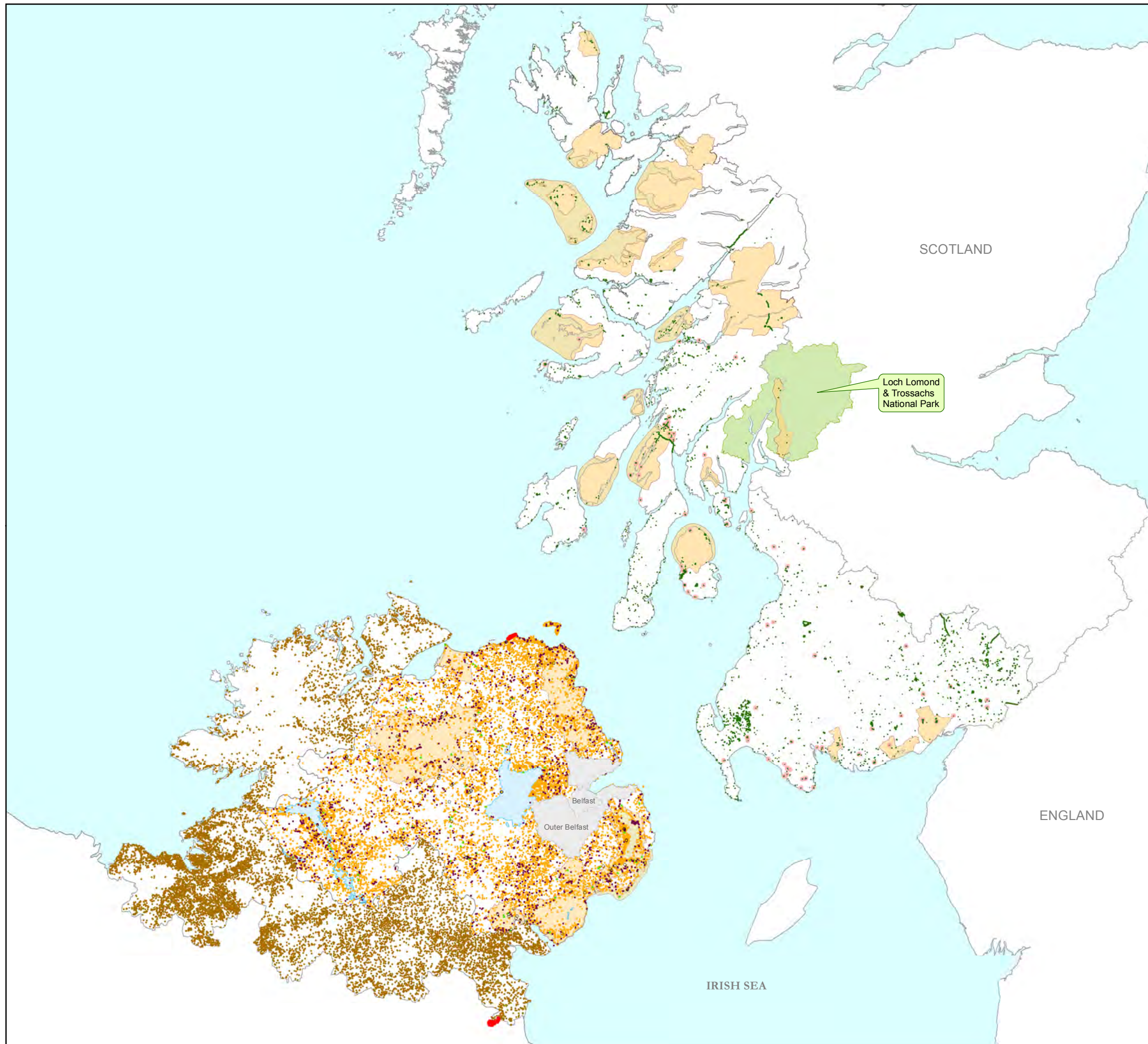


Scale 1:1,700,000 at A3 size

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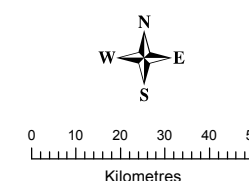
Statutory Designations - Landscape & Cultural Heritage Sites

Site & Monument Record (NI)

- Scheduled
- State Care
- State Care and Scheduled
- Non-statutory
- National Monument (Eire)
- Scheduled Monuments (Scotland)
- Scottish Properties in Care

- World Heritage Site
- AONB (NI) / NSA (Scotland)

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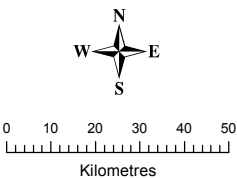
SEA of the EU Programme for Cross
Border Co-Operation (INTERREG V)

Access and Sustainable Transport

- NI & Eire National Waymarked Trails
- DARD Forestry Service Grant aided woodlands (1970 to 2013)
Pedestrian access from March 17th 2013
- NI Historic Parks & Gardens and Scottish Gardens & Designed Landscapes
- National Monuments Service (Eire) Designed Landscapes
- National Cycle Route
- Proposed & Existing Scottish National Trails (DRAFT 2012)
- Scottish Country Parks

NOTE:
The majority of historic parks, gardens, designed landscapes or demenses in the above inventories are in private ownership and may not be accessible to the public without seeking permission or paying an admission charge.

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