Policy Background

Green Infrastructure Fund

Guidance for Applicants

July 2016

Disclaimer

Applicants should be aware that as the Green Infrastructure Fund is a new programme, the guidance will be reviewed as the programme evolves and therefore may be subject to change. The European Union and Scottish Ministers reserve the right to amend the National Rules and SNH reserves the right to amend the published guidance during the period of the programme. Decisions to fund Projects will be based on the availability of funding, how well the project matches the Green Infrastructure Fund priorities and its contribution to outcomes as part of the whole Strategic Intervention. These priorities may change during the course of the Strategic Intervention to take into account gaps in meeting priorities in previously funded Projects and not to fund at all. The Scottish Government reserves the right not to award any support at all under this programme.

Version Control

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Contents

1.   Introduction

The purpose of this paper is to provide some of the policy background and rationale to the Green Infrastructure Strategic Intervention. This is not intended to be comprehensive or exclusive and there may be policy drivers that are important in some localities that are not addressed here. The first section sets out the overarching policies and subsequent sections focus on the policy framework of our five outcomes and the horizontal themes.

2.   Strategic Policy

This section sets out the high level policies that govern green infrastructure and demonstrates how it contributes to delivering the Scottish Government's primary purpose. Subsequent sections explore the policy framework and background to the Outcomes and the Horizontal Themes.

2.1   ERDF Regulation (No 1301/2013)

This states that it is necessary to support integrated actions to tackle economic, environmental, climatic and social challenges affecting urban areas. One of the specific ERDF investment priorities (6e) is to "*take action to improve the urban environment, to revitalise cities, regenerate and decontaminate brownfield sites, reduce air pollution and promote noise reduction measures.*"

2.2   European Structural and Investment Funds (ESIF) thematic objectives

The Green Infrastructure Strategic Intervention contributes to thematic Objective 6 "*preserving and protecting the environment and promoting resource efficiency*". The Scottish ERDF Projectal Programme identifies that Green Infrastructure will help to make Scotland's cities more attractive and environmentally sound places to live and invest.

2.3   The National Performance Framework

The National Performance Framework (NPF)[1] sets the Scottish Government's high level ambitions for delivering its purpose of creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.

The NPF states that "*well-designed, sustainable places, both urban and rural, support people's physical and mental wellbeing*" and it specifically mentions the importance of access to greenspace.

It recognises that the ability of Scottish businesses to succeed will depend upon "*attractive well connected places to live and work that build on Scotland's natural assets in terms of cities, towns…*" and an "*approach to health and well-being that ensures that all of Scotland's*

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[1] [1] http://www.gov.scot/About/Performance/scotPerforms/outcome/business

people enjoy a level of physical and mental health which allows them to maximise their potential."

The role of our local environments is crucial in underpinning wellbeing and addressing the inequality that exists in our communities: "*Our satisfaction with our neighbourhoods has an important influence on the overall quality of our lives. In Scotland as a whole, more than 9 in 10 adults rate their neighbourhood as either very good or fairly good. However, the neighbourhood rating is significantly lower in more deprived areas*" and "*the proportion rating their neighbourhood as very good increases significantly as deprivation declines. Of those living in the 20% most deprived areas of Scotland in 2014, 30% rate their neighbourhood as a very good place to live, rising to 76% for those living in the 20% least deprived areas.*"

The relationship between health, physical activity and productivity is acknowledged "*We can make a significant contribution to the Government's Purpose by increasing the amount of time people spend in good health, by increasing their ability to take part in the workforce, by improving productivity and through population growth. In combination, these factors will promote economic sustainability."* In support of this, one of the National Performance Indicators included in the National Performance Framework is to *"Increase people's use of Scotland's outdoors*".

The ERDF Horizontal Themes correlate well with the NPF, through the Wealthier and Fairer and the Safer and Stronger objectives, including a number of National Outcomes, including:

- We have strong, resilient and supportive communities where people take responsibility for their own actions and how they affect others; and

- We live in well-designed, sustainable places where we are able to access the amenities and services we need.

2.4 The Scottish Government's Economic Strategy

Scotland's Economic Strategy[2] sets out an overarching framework for a more competitive and a fairer Scotland and identifies four broad priority areas where our actions will be targeted to make a difference.

It recognises that the continuing health and improvement of the natural environment is vital to sustainable economic growth and enhancing the quality of our areas as places to live and work is dependent upon the quality and accessibility of facilities and the physical and natural environment in our communities.

2.5 The National Planning Framework 3 (NPF3)

The NPF 3[3] sets the context for development planning in Scotland and provides a framework for the spatial development of Scotland as a whole.

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[2] Economic Strategy
[3] [3] http://www.gov.scot/Resource/0045/00453683.pdf

The NPF3 states that The Scottish Government wants a "*step change in environmental quality, especially in places with long-standing disadvantages arising from a legacy of past industrial activity*". The Framework recognises that a "*more integrated approach and 'greening' of the urban environment through green infrastructure and retrofitting can improve the quality of life within our towns and cities, alongside enhancing their longer-term environmental performance and climate resilience.*"

On Scotland's legacy of vacant and derelict land, it notes that "*Most of Scotland's vacant and derelict land lies in and around our cities, and particularly in west central Scotland. This presents a significant challenge, yet also an opportunity for investment.*"

It goes on to say that "*Well-designed green infrastructure can support regeneration efforts within our towns and cities, and improved attractiveness and environmental performance can act as a catalyst for economic investment. Temporary uses for vacant and derelict land, for example for community growing or supporting biodiversity, can also help to attract investment in specific sites or wider areas. Whilst re-use of vacant land remains a priority, in some cases greening initiatives could be the best permanent solutions for sites where built development is unrealistic for cost or other reasons.*"

2.6   Scottish Planning Policy (SPP)

The SPP[4] identifies green infrastructure as an essential part of our long-term environmental performance and climate resilience. It seeks to significantly enhance green infrastructure, including improving access to and the quality of greenspace and green networks, particularly in and around urban areas, to create healthier communities and neighbourhoods that are more resilient to climate change and encourage investment and development. It identifies the importance of green networks, green space, street trees and other vegetation, green roofs, wetlands and other water features, and coastal habitats to help Scotland mitigate and adapt to climate change.

Local development plans should encourage the temporary use of unused or underused land as green infrastructure while making clear that this will not prevent any future development potential which has been identified from being realised. This type of greening may provide the advance structure planting to create the landscape framework for any future development.

Both Scottish Planning Policy (page 50) and the national Land Use Strategy[5] (page 3) support the significant enhancement of green infrastructure in urban areas as it contributes to Scotland's prosperity by encouraging development and investment.

It is estimated that 11% of Scotland's total annual economic output is directly and indirectly dependent on the sustainable use of the environment, estimated to be worth around £17.2 billion a year. This supports employment for 242,000 people, which amounts to 14% of all jobs in Scotland. Urban green infrastructure supports economic success by attracting businesses and investment, and can improve workforce productivity.

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[4] Scottish Planning Policy
[5] http://www.gov.scot/Publications/2011/03/17091927/12

2.7   PAN 65 Planning and Open Space

PAN 65 advises: "*Some of the best open spaces are part of networks. These can help define the landscape or townscape structure, provide links with the countryside and allow movement of people and wildlife*". It goes on to suggest that "*Local authorities should aim to maintain or form networks of green and civic spaces which maintain and enhance environmental qualities; provide a range of opportunities for recreation and leisure; link and create wildlife habitats; and encourage walking and cycling and reduce car use*".

2.8   Green Infrastructure: Design and Placemaking

Green Infrastructure: Design and Placemaking[6] points out that green features can be a useful way to form clear and attractive entrances and maintain and inject distinctive features, landmarks and routes into a place to make it more welcoming.

2.9   Designing Streets

Designing Streets[7] highlights that "*Connected and permeable networks encourage walking and cycling, and make navigation through places easier.*"

2.10   Creating Places - a Policy statement on architecture and place for Scotland

Creating Places[8] sets out the Scottish Government's aspirations for architecture and place making. Successful places can unlock opportunities, build vibrant communities and contribute to a flourishing economy. The document contains an action plan that sets out the work that will be taken forward to achieve positive change. Designing Places promotes principles of context, identity and character.

The six qualities of successful places are set out as:

- distinctive;

- safe and pleasant;

- easy to move around;

- welcoming;

- adaptable; and

- resource efficient.

These guiding principles continue to underpin the Scottish Government's approach to delivering good places. This guidance provides strong context and justification for the

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[6] http://www.gov.scot/Publications/2011/11/04140525/0
[7] Designing Streets
[8] http://www.gov.scot/Publications/2013/06/9811/3

development and integration of green infrastructure into neighbourhoods and developments. Therefore, we have included a number of extracts below.

People and Communities

Quality places are often central to community life. A successful place is accessible to all and encourages people to connect with one another. The relationships which are fostered help to create communities where there is a high level of positive activity and interaction. These are communities which are safe, socially stable and resilient.

Sustainable Places

Quality places can, by their very nature, be sustainable. Sustainable places are often characterised by well-designed, walkable mixed-use neighbourhoods with integrated facilities. Places which have enduring appeal and functionality are more likely to be valued by people and therefore retained for generations to come.

Neighbourhoods which are compact and well-connected give residents additional options, allowing them to choose to use sustainable modes of transport to reach their destination. In this way, the development of, and enhancement of, walkable neighbourhoods has the potential to reduce the significant greenhouse gas emissions related to everyday journeys.

Good developments not only house people, but support a wide range of activity. Through the careful use of land, developments should be designed to accommodate a range of housing, local retail, leisure facilities, and high quality greenspaces which are attractive, rich in biodiversity and well connected.

Health

Physical and social environments are critical elements in people's lives and can impact on their health and wellbeing. Neighbourhoods which can increase human connectedness through their design and where there is access to good quality greenspace, safe streets and places for children to play outdoors can positively benefit health.

We must take advantage of the health benefits related to physical activity and so it is vital that we create attractive, accessible places that put pedestrians first and make it safe and attractive for younger and older people to go outdoors. Creating places which are attractive and well-connected encourages people to walk and cycle and children to play.

Whereas the physical environment can have a positive impact on health and wellbeing, poor quality surroundings can have the opposite effect. People who feel that they have no control over their environment, or do not experience it as a meaningful place, are more likely to experience chronic stress. Chronic stress puts people at increased risk of mental and physical ill health and is linked to early mortality.

'There is a proven link between how we perceive our world and surroundings and the various biological responses that go on inside the body. How people feel about their physical surroundings, can impact on not just mental health and wellbeing, but also physical disease.'

Sir Harry Burns, Chief Medical Officer, The Scottish Government

Culture and Identity

Our natural and built environments help to define us as a country.

The quality of our assets contributes to Scotland's international image, as a confident, forward looking country. This is crucial in attracting people to visit and invest. It is the responsibility of us all to conserve these rich national assets, but we must also work together to create a positive legacy of which our generation can be proud.

Creative places

Culture-led regeneration can have a profound impact on the wellbeing of a community in terms of the physical look and feel of a place and can also attract visitors, which in turn can bolster the local economy and sense of pride or ownership.

Creative places are necessary if we want to attract and develop the creative talent of tomorrow. Taking a fresh perspective and encouraging new ways of working can enable Scotland to lead the way in developing a successful creative economy.

Successful cities tend to be vibrant and cultural cities, which have a distinct quality of place, amenities, retail and cultural offerings to attract and retain talent, investment and visitors

Landscape design

Landscape design is an integral component of placemaking. Well-designed landscapes can provide many benefits: safe, creative spaces for children to play and people to gather in; public space that promotes access to the outdoors; biodiversity and water management; the reduction of airborne particles; and improved micro-climate and space for local food production. These are all important issues that can be combined and delivered effectively through good landscape design.

2.11 The Community Empowerment Act

The Community Empowerment Act provides a strong means to address social inclusion with its new focus on disadvantage at neighbourhood level and requirement for Community Planning Partnerships to draw up Locality Plans. It also complements this through aiming to strengthen community engagement in delivering public services and managing assets, including land.

A theme running through the Community Empowerment Act is what the Christie Commission described as co-production – the participation of communities in the design and delivery of the public services for those communities. Achievement of this ambition may require the machinery of government to adopt a more enabling role than its current focus on delivery.

3.   Outcome 1 – Nature, Biodiversity and Ecosystems

Improved green infrastructure enhances and restores the biodiversity and ecosystem function of an area, helping our urban ecosystems be more resilient to change.

By increasing the strength of the urban green network, it provides, restores and safeguards many more services to people and nature. Improvements to urban ecosystems provide benefits to people and take account of those people's needs, improving livelihoods and quality of life, especially for those who are most disadvantaged. People value nature and what it provides them and are aware of the steps then can take to conserve it.

Greenspace and green infrastructure are linked through a habitat network which has better connections and reaches further into towns and cities, enabling movement of wildlife. Improved green infrastructure has a varied structure, with trees, shrubs and a variety of ground vegetation.

Habitat networks are improved, increasing space for biodiversity and helping species to adapt to climate change. Better natural connections between urban and rural environments redress some of the losses resulting from our heavy industrial past.

3.1 Aichi Biodiversity Targets

The twenty headline Aichi Biodiversity Targets[9] for 2015 to 2020 are organised under five strategic goals. The goals and targets comprise both aspirations for achievement at the global level, and a flexible framework for the establishment of national or regional targets. We believe the following targets may be advanced by addressing deficits in urban green infrastructure:

Targets

1 By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably

2 By 2020, at the latest, biodiversity values have been integrated into national and local development and planning processes

5 By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced

8 By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity

9 By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment

14 By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable

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[9] https://www.cbd.int/sp/targets

15 By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification

18 By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.

3.2   Scottish Biodiversity Strategy

The Aichi Targets are delivered in Scotland through the Scottish Biodiversity Strategy: 2020 Challenge[10] and its associated Route Map[11]. The 2020 Challenge for Scotland's Biodiversity recognises the *"increased understanding of how nature sustains us, and the connections between biodiversity, healthy functioning ecosystems and wider benefits to individuals and society."* And how we *"must respect the intrinsic appeal of nature too, because where we lose species or natural habitats we are diminished as a nation and our nature is the poorer."*

The key outcomes relevant to urban greenspace are:

- nature providing goods and services which support our lives and economy;

- communities involved in decision making take pride in their local environment;

- healthier local environments are more widely understood and supported by local communities; and

- a healthy local environment is more resistant to climate change, including flooding and urban heating.

The Six Big Steps for Nature in The Scottish Biodiversity Strategy – Route Map to 2020 include the following priority 'projects':

- Quality greenspace for health and education benefits – to ensure that the majority of people derive increased benefits from contact with nature where they live and work;

- More people experiencing and enjoying nature through better provision of information on opportunities to enjoy the outdoors;

- Taking learning outdoors by developing and improving greenspace and opportunities for outdoor learning close to schools; and

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[10] 2020 Challenge for Scotland's Biodiversity
[11] http://www.gov.scot/Resource/0048/00480289.pdf

- Developing Scotland's Natural Health Service by delivering the second phase of the NHS Greenspace Demonstration Project and to complete mainstreaming of greenspace provision and use on the NHS estate.

The following concepts may be helpful in thinking about delivering ecosystem, nature and biodiversity outcomes through improving green infrastructure.

3.2.1 Ecosystem Health

The agreed working definition of "ecosystem health" published in the 2020 Challenge is *"The status of an ecosystem including the condition of its natural assets (biodiversity/ geomorphology), its functional quality and its capacity to sustain both assets and function into the future (i.e. sustainability)".*

This implies that Ecosystem Health is a measure of the status of ecosystems, through a combination of three inter-related elements:

- Condition of components (assets) – how far they are from a 'good' state;

- Function – the extent to which ecosystems retain their natural function and therefore have the capacity to deliver a range of benefits; and

- Sustainability and resilience – the extent to which ecosystems are resilient and their capacity to deliver benefits can be sustained under human and environmental pressures, including climate change.

3.2.2 Ecosystem Services

The benefits that nature provides are sometimes called ecosystem services. Whatever they are called, most of us appreciate them, even if we do not know their true value - whether it's a local park where we go to wind down or thoughts of wider landscapes, coasts, mountains, lochs or woodland.

Benefits from nature range from the complex biological processes that create soil and clean water to inspiring landscapes and wildlife spectacles. Ecosystem services are the benefits provided by ecosystems that contribute to making human life both possible and worth living.

Our health and wellbeing depends upon the services provided by ecosystems and their components: water, soil, nutrients and organisms. Therefore, ecosystem services are the processes by which the environment produces resources used by humans such as clean air, water, food and materials.

Ecosystem services can be defined in various ways. The Millennium Ecosystem Assessment[12] provided the most comprehensive assessment of the state of the global environment to date; it classified ecosystem services as follows:

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[12] http://www.ecosystemservices.org.uk/ecoserv.htm

- Supporting services: The services that are necessary for the production of all other ecosystem services including soil formation, photosynthesis, primary production, nutrient cycling and water cycling;

- Provisioning services: The products obtained from ecosystems, including food, fibre, fuel, genetic resources, biochemicals, natural medicines, pharmaceuticals, ornamental resources and fresh water;

- Regulating services: The benefits obtained from the regulation of ecosystem processes, including air quality regulation, climate regulation, water regulation, erosion regulation, water purification, disease regulation, pest regulation, pollination, natural hazard regulation;

- Cultural services: The non-material benefits people obtain from ecosystems through spiritual enrichment, cognitive development, reflection, recreation and aesthetic experiences – thereby taking account of landscape values.

The value of nature to people and its economic importance have been demonstrated by two studies: the UK National Ecosystem Assessment (NEA)[13] and The Economics of Ecosystems and Biodiversity[14]. For example, the peatland soils of Scotland are estimated to store ten times more carbon than all UK trees, and the value of insect pollination services in Scotland is estimated at £43 million per year[15].

3.2.3 Ecosystem Restoration

Ecosystem Restoration is the *"process of assisting the recovery of an ecosystem that has been degraded, damaged or destroyed"* (SER Primer, 2004).

Many of the world's ecosystems have undergone significant degradation with negative impacts on biological diversity and peoples' livelihoods. There is a growing realisation that we will not be able to conserve the earth's biological diversity through the protection of critical areas alone. When applicable, ecosystem restoration should be an important component of conservation and sustainable development programmes so that the livelihoods of people depending on these degraded ecosystems can be sustained.

Restoring the quality or increasing the area of some habitats which past land uses have adversely affected is an important way of trying to recover ecosystem health[16]. Large-scale habitat restoration at the landscape scale can be costly, but re-establishing ecological processes and ecosystem services by following an ecosystem approach can deliver benefits for people and wildlife that significantly outweigh the costs.

The 2020 Challenge for Scotland's Biodiversity has some examples of what needs to be done:

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[13] http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx
[14] http://www.teebweb.org/
[15] http://www.snh.gov.uk/about-scotlands-nature/scotlands-biodiversity/an-ecosystems-approach/what-benefits-nature-provide/
[16] http://www.biodiversityscotland.gov.uk/doing/ecosystems/habitat-restoration/

- restore the hydrological integrity of degraded peatland;

- restore degraded coastal dune systems;

- restore native woodland, montane scrub and near-natural treelines where these have been suppressed or eliminated by grazing and burning;

- expand woodland within specific catchments;

- restore riparian and woodland flora where invasive species such as Rhododendron or Japanese knotweed are becoming dominant; and

- establish saltmarsh in some areas where there is coastal inundation.

3.2.4   Ecosystem Approach

We need to work with nature, rather than against it, to make the most of the benefits it provides. This will mean working together across all sectors in society, because, in nature everything is connected. An ecosystems approach provides a way of doing this so that the benefits of nature are included in the way we *manage the land, water and sea.*

An ecosystems approach means working with nature for a healthy environment for people and nature. It should be applied to plans, policies and management that affect, or can benefit from, the natural environme*nt. An ecosystems approach is:*

'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way' (Convention on Biological Diversity).

Three key principles guide the use of an ecosystems approach:

- *Take account of how nature works. Nature (ecosystems) connects across landscapes so we need to consider the broad scale as well as the local. The capacity for ecosystems to respond to impacts and provide benefits is not infinite. Ecosystems are dynamic so we must allow for change and make use of new information;*

- *Take account of the benefits that nature provides to people (ecosystem services), from food and water to flood and climate control, recreation and mental well-being;*

- *Involve people in decision-making, those who benefit from nature and those who manage the land, water or sea.*

There are many ways of applying an ecosystems approach to plans, policies and management of the land, water and sea. All of these involve some key actions:

- *Identify the natural assets (green infrastructure) which provide benefits, what these benefits (ecosystem services) are, and who benefits from them;*

- *Understand the effects of different planning or resource-use choices on nature and the benefits it provides;*

- *Involve people in decision-making and in getting things done.*

3.2.5 Ecological Coherence

Ecological coherence occurs when dispersal and genetic exchange occurs, and when there is the full range of variation of valued features of a particular habitat, with resilience to natural or man-made disturbance or damage (adapted from Catchpole[17])

3.2.6 Habitat networks

Integrated Habitat Network is the term used for studies that combine networks of more than one habitat. This could include, for example, networks of woodlands, grasslands, wetlands and so on.

An integrated habitat network (IHN) focuses on more than one habitat, e.g. in Central Scotland Green Network (CSGN) area Broadleaved Woodland, Wetland (fen marsh swamp elements), Neutral Grassland, Heathland and Acid Grassland have been mapped.

In delivering the Scottish Government's aspirations for development planning, Scottish Planning Poli*cy (SPP paragraph 126) states:*

"*A strategic approach to natural heritage in which wildlife sites, landscape features and other areas of open space are linked together in an integrated habitat network can make an important contribution to the maintenance and enhancement of local biodiversity. Planning authorities should seek to prevent further fragmentation or isolation of habitats and identify opportunities to restore links which have been broken."*

Planning for IHNs is one way that local authorities can further the conservation of biodiversity. However, IHNs can also deliver a wide range of benefits for people and they can play a key role as part of a green infrastructure approach, in making places with distinct identities where people want to live, work and play.

Habitat networks across the whole of Scotland began to be mapped about a decade ago. Network-mapping involves a detailed desk study using digital data within a geographic information system (GIS) to identify Habitat Networks. Good maps (subdivided at regional level) are now available for forest habitat networks and open ground habitat networks[18].

Mapping the connectivity of a habitat network can provide a 'stock-take' of the natural assets in a particular locality or region, and identify (and prioritise) areas for action. These could be areas where the network could be expanded or managed better, or where connectivity could be increased. Habitat connectivity is important because it enables species to move from one suitable area of habitat to another and makes species and habitats more resilient to change. Put simply, networks of connected habitats provide more benefits for people and nature than similar areas of disconnected habitats. There are a number of tools now available that can help us identify IHNs and plan for their management and use.

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[17] http://www.snh.gov.uk/docs/B1028804.pdf
[18] http://www.forestry.gov.uk/fr/INFD-69PF6U

3.2.7 *Invasive Non-Native Species*

The Wildlife and Natural Environment (Scotland) Act 2011[19] has brought in new provisions governing the introduction of non-native species[20] in Scotland. Non-native species (those plants and animals which have found their way to a new habitat through human activity) can be harmful to our environment. Some non-native species may become invasive, damaging or displacing native species, for example.

4. Outcome 2 – Environmental quality, flooding and climate change

Our greenspaces and routes are multifunctional, providing improved ecosystem services for communities, helping us adapt to and mitigate climate change, improving our air and water quality, improving the ecological status of water bodies, managing surface water runoff and reducing flooding.

There are more buffer areas around greenspace including traffic-calmed roads near greenspace. Our streets are greener, with more street trees/vegetation. Routes between greenspaces contribute to a green network. Our rivers, streams and wetlands (blue network) are re-naturalised, with vegetated banks, gentler slopes and swales. This improvement allows us to create space for the restoration of urban rivers, and provides enhanced opportunities for community amenity, physical activity and wellbeing.

Opening up and re-naturalising our urban watercourses helps to reduce flooding and improve the quality of our urban rivers. Green infrastructure will change the way communities perceive storm water; it is no longer viewed as a problem but as a resource that contributes to making better places. The urban fabric is permeable, allowing rain to infiltrate into the ground, slowing the flow by collecting and moving surface water safely above ground into the natural river system and removing it from the sewerage system. In extreme rainfall events green and blue infrastructure can be used to store water above ground and manage water safely through designated flood routes, reducing surface water runoff and managing surface water flooding. Run-off to rivers is reduced and water treated before it enters the river system - removing pollutants, improving water quality and managing river flooding.

Risks from climate change are reduced as communities and infrastructure are more resilient. Improved and new greenspace has reduced the impact of environmental problems like noise pollution, poor air and water quality, urban heating and flooding by improving the ecosystem services that urban land provides. Vegetation and soils absorb CO2 and other atmospheric pollutants. Water management through greenspace mitigates the threat of flooding to transport, power infrastructure and homes.

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[19] http://www.legislation.gov.uk/asp/2011/6/contents/enacted
[20] http://www.snh.gov.uk/protecting-scotlands-nature/nonnative-species

4.1 The Scottish Climate Change Adaptation Programme

The UK Climate Projections (UKCP09) report predicts that climate change may lead to warmer and drier summers, warmer and wetter winters with less snow, and more extreme temperature and rainfall events. The predicted increase in rainfall is expected to variably increase the potential for river and surface water flooding, and similarly, there is expected to be a rise in sea levels that will vary around the coastline[21].

The Scottish Climate Change Adaptation Programme[22] aims to increase the resilience of Scotland's people, environment, and economy to the impacts of a changing climate. It highlights the role of green infrastructure in helping Scotland mitigate and adapt to climate change, as it "*can help nature to adapt to climate change by strengthening habitat networks, reducing habitat fragmentation and providing opportunities for species to migrate. It also helps people to adapt by providing other benefits like sustainable drainage, flood alleviation, coast protection, cooling in urban areas, and places for people to walk and cycle*".

One of the Scottish Climate Change Adaptation Programme objectives is to embed climate change adaptation, such as habitat networks and green networks, into wider land use planning decisions through the use of Forestry and Woodland Strategies, regional land use strategies, and Strategic and Local Development Plans and development master-plans.

Green infrastructure can help nature to adapt to climate change by strengthening habitat networks, reducing habitat fragmentation and providing opportunities for species to migrate. It also helps people to adapt by providing other benefits like sustainable drainage, flood alleviation, coast protection, cooling in urban areas, and places for people to walk and cycle.

ClimateXChange[23] highlights two approaches that are relevant to Green infrastructure:

- Low-regret actions are relatively low cost and provide relatively large benefits under a range of predicted future climates. Examples include incorporating greenspace, permeable paving and sustainable drainage systems in urban developments.

- Win-win actions contribute to adaptation whilst also having other social, economic and environmental benefits. Examples include natural flood management techniques, such as tree planting, that reduce flood risk and support biodiversity conservation and habitat connectivity; and green roofs which reduce building temperature and rainfall runoff at the same time as reducing energy use for heating and cooling.

4.2 Flooding

The EU Floods Directive requires Member States to prepare strategic plans for managing flood risk. In Scotland, the EU Floods Directive is being implemented in Scotland through the Flood Risk Management (Scotland) Act 2009 (the FRM Act). The FRM Act requires the

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[21] From draft Flood Risk Management Strategies
[22] http://www.gov.scot/Publications/2013/06/2469/4
[23] http://www.climatexchange.org.uk/adapting-to-climate-change/examples-no-regret-low-regret-and-win-win-adaptation-actions/

production of Flood Risk Management Plans (Flood Risk Management Strategies and Local Flood Risk Management Plans) that coordinate the efforts of all organisations with responsibilities for flooding in Scotland. The flood risk Management Strategies set the national direction of future flood risk management, identify the most sustainable actions to manage flooding and help target investment where flood risk is highest and greatest benefits can be achieved. Local Flood Risk Management Plans have been developed in parallel and will provide additional local detail on the funding and delivery timetable for actions.

Green (and blue) infrastructure will be an important type of sustainable action to manage all sources of flooding and in particular urban surface water flooding and flooding from small urban burns.

The Ministerial guidance on sustainable flood risk management (Scottish Government (2011), The Flood Risk Management (Scotland) Act 2009: Delivering Sustainable Flood Risk Management) gives guidance to the SEPA and the responsible authorities on fulfilling their duties under the FRM Act and in particular on steps that should be taken to manage flooding in a sustainable manner. It sets out principles that should be adopted by SEPA and the responsible authorities to support the delivery of integrated drainage:

Principles to support integrated drainage:

- increase the percentage of new surfaces that are permeable;
- aim to deal with storm water runoff from impermeable surfaces as close to source as possible;
- replace existing impermeable surfaces with permeable surfaces where possible;
- minimise the amount of drainage going underground as this is often an inflexible solution that cannot deliver wider benefits or be easily adapted to future conditions;
- maximise opportunities to manage surface water before it enters the sewer system;
- design for exceedence by ensuring that existing and new developments have flood plains and safe flow paths.

4.3   Water environment

Scotland's water environment is one of our greatest natural assets providing many ecosystem services which support our health, wellbeing, wildlife and the sustainable growth of our economy.

Some of the key benefits of protecting and improving the water environment are:

- safeguarding and supporting the expansion of businesses that depend on a high quality water environment, such as tourism, fisheries, aquaculture, and whisky production;

- providing cooling water for key industries such as distilleries and hydro power;

- providing effective dilution for pollutants;

- protecting drinking water supplies and avoiding increased purification treatment costs;

- maintaining and expanding opportunities for a wide range of recreational activities; contributing to the social well-being and regeneration of areas where a high quality water environment is, or has the potential to be, an important community amenity;

- protecting and enhancing wildlife, including rare and endangered species;

- improving our ability to cope with the effects of a changing climate (e.g. more frequent droughts, floods, heatwaves, etc.[24]).

The EU Water Framework Directive[25] requires Member States to improve the ecological status of water bodies. River Basin Management Plans[26] have been developed setting out the objectives for water bodies and the action that needs to be taken to improve the status of water bodies.

4.3.1   Ecological status improvements

The quality of many of the water bodies in the Scotland river basin district is already good. However, around one third (approximately 960 water bodies) are expected to be still at less than good status at the end of 2015. Improving these water bodies is the challenge for the second (2015 to 2021) and third (2021 to 2027) river basin management planning cycles. For rivers, lochs, estuaries and coastal waters, the main aim is to ensure their ecological quality is good. This requires:

- water quality to be good (i.e. unpolluted);

- the quality of the physical structure of beds, banks and shores to be good;

- removal of significant man-made impediments to the movement of migrating fish;

- water flows and levels to be good;

- protection from invasive non-native species (INNS).

Green Infrastructure can contribute to improving the ecological status of water bodies and so also protect the benefits we gain from a healthy water environment.

4.3.2   Physical condition of the water environment.

Scotland's urban spaces have a long and intimate relationship with water. We depend on our rivers to supply water and transport waste, to provide recreational and breathing space within our communities and to beautify our urban areas and provide habitat for the plants and animals that live alongside us[27].

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[24] From Consultation on development of second river basin management plan
[25] http://ec.europa.eu/environment/water/water-framework/index_en.html
[26] http://www.gov.scot/Topics/Environment/Water/15561/WFD/DRBMPs
[27] http://www.sepaview.com/2015/06/greening-our-cities-by-restoring-urban-rivers/

For many years we have constrained and hidden our rivers from view in our towns and cities, using them as an energy source to fuel the industrial revolution and as a conduit for the removal of our waste. As a direct consequence of this, they have lost much of the natural processes and behaviour they once had.

SEPA's Water Environment Fund[28] (WEF) promotes and funds improvements to physical condition and to fish migration across Scotland as set in the River Basin Management Plans. In doing so we are seeking to restore as many of those natural processes as we possibly can so our rivers provide the economic, environmental and social benefits to the communities they flow through.

4.4 Air quality

Air pollution is a major environmental pressure which harms human health, affects biodiversity and ecosystem services and contributes to climate change. Transport, agriculture, energy production and industry are all key pollution sources and due to the trans-boundary movement of pollutants, their impacts can be evident at some distance from source. The primary air pollutants are generally emitted as gases: sulphur dioxide (SO_2), nitrous oxide (NO), nitrogen dioxide (NO_2) and ammonia (NH_3). These combine with water in the atmosphere to form acidifying pollutants that are removed from the air either directly at the ground (dry deposition) or washed out by rain (wet deposition).

In 2001 the European Community agreed to set national emission ceilings through the National Emission Ceilings Directive (NECD)[29]. This set caps (or 'ceilings') for national emissions of four key air pollutants and requirements for Member States to monitor and report on these, with analysis of compliance undertaken by the European Environment Agency. The NECD is currently being reviewed as part of The Clean Air Policy Package[30] and the revised legislation will ensure updated national emission ceilings for six key air pollutants for 2020 and 2030: particulate matter, sulphur dioxide, nitrogen oxides, ammonia, volatile organic compounds and methane.

The UK Air Quality Strategy for England, Scotland, Wales and Northern Ireland[31] was published in in 2007. Measures agreed at the national and international level form the basis of air quality objectives and limits that are set out in this document. Concentrations and deposition of air pollutants are assessed against a range of criteria to protect both human health and the environment. Environmental criteria include critical loads for nitrogen and acid deposition and critical levels for ammonia, sulphur dioxide, nitrogen dioxide and ozone.

Local Authorities monitor and report on air quality in urban areas using a variety of sampling techniques across a network of sampling stations. Data are reported hourly via the Air Quality in Scotland[32] website. With these data, pollution hotspots can be identified and

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[28] http://www.sepa.org.uk/environment/water/water-environment-fund/
[29] http://ec.europa.eu/environment/air/pollutants/ceilings.htm
[30] The Clean Air Policy Package
[31] http://webarchive.nationalarchives.gov.uk/20130123162956/http:/www.defra.gov.uk/environment/quality/air/air-quality/approach/
[32] http://www.scottishairquality.co.uk/

remedial action can be taken. Simple steps such as raising awareness of air pollution impacts and encouraging a behavioural change in transport choices can lead to considerable reductions in air pollution levels.

Reductions in air pollutants can be greatly complemented by use of green infrastructure in urban areas. Practical steps such as increasing the number of trees and plants in towns and cities, especially along transport routes can help improve urban air quality. Plants and trees act as natural filters as the surface of leaves absorb carbon dioxide, tiny dust particles and other gases from the air, including harmful pollutants such as nitrogen dioxide. For example, recent studies have reported that roadside trees can trap up to 90% of traffic related air borne dust particles. Other studies have found that street trees are also associated with a lower prevalence of asthma in children, even after adjustment for potential confounding factors including socioeconomic characteristics and proximity to pollution sources[33].

Different types of trees and plants can remove different levels of pollutants. Research in the West Midlands by CEH and Lancaster University[34] has shown that trees are more effective at removing pollutants than areas of grass, and that evergreen trees and those with a large leaf surface area are better at removing pollutants than others species of tree. The Scots Pine, Common Alder and Silver Birch are all examples of trees which reduce air pollutant levels successfully. Green spaces and street trees in towns and cities have the additional benefit of reducing temperatures in summer. Shade from trees can reduce over-heating and consequently, reduce the rate at which some pollutants (such as ozone) are formed[35].

A Low Emission Strategy for Scotland[36] is currently being developed. Its mission is, 'To protect and enhance health, wellbeing, environment, place-making and sustainable economic growth through improved air quality across Scotland.' The use of green infrastructure is specifically mentioned within the draft strategy as having the potential to play a key part in this.

4.5   Protecting and restoring soils

Soils in our towns and wider countryside are one of Scotland's greatest assets, providing and supporting a wide range of essential environmental, social and economic functions providing benefits to us.

Soil health and soil quality play a key role in balancing the interactions between biodiversity, air and water processes. Soils are able to carry out more than one environmental function at a time, hence providing a range of benefits in the same place. Healthy soils support food and fibre production, control water flow and quality, store carbon and maintain the balance of gases in the air, and support valuable habitats, plants and animals. Soil also helps preserve cultural and archaeological heritage, provide raw materials and a platform for building on.

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[33]http://www.forestry.gov.uk/pdf/urgp_benefits_of_green_infrastructure.pdf/$FILE/urgp_benefits_of_green_infrastructure.pdf
[34] http://www.es.lancs.ac.uk/people/cnh/UrbanTreesBrochure.pdf
[35] http://www.sepa.org.uk/making-the-case/air/green-infrastructure/
[36] http://www.gov.scot/Resource/0046/00467625.pdf

The Scottish Soil Framework[37] was published in 2009 to co-ordinate existing policies that relate to soils. A number of actions to help protect soils and encourage sustainable soil management were also agreed. The main outputs were the publication of The State of Scotland Soils Report and access to information via Scotland Soils Website and support for development and implementation of a Soil Monitoring Action Plan.

The Land Use Strategy for Scotland was published in 2011 as part of the Climate Change (Scotland) Act 2009[38]. The management and protection of carbon-rich soils to reduce the effects of climate change is a key element of the land use strategy. Scottish Planning policy also includes a number of policies which recognise the importance of soil and the role of planning in promoting its sustainable use.

5.   Outcome 3 – Involving communities and increasing participation

People feel confident and empowered to use their greenspace. There is a perception that crime, including 'low level crime', or anti-social behaviour is reduced. People use their greenspace more often and for a wider range of activities, both formal and informal. Schools and other organisations use greenspace for education, skills development, volunteering, recreation, and play.

Enjoying the outdoors has become more common and is part of our culture. People explore the area to experience nature, relax and stay fit. There is an increased choice of greenspace available with a range of different sizes, facilities, habitat, play equipment and experiences to visit close to home. Interpretation helps make using the sites and network easier to use and explains what wildlife, facilities and activities can be found there, and what benefits they provide. There is a broad range of experiences that do not need expertise in the outdoors. There are more community gardens, allotments and food production and more wild food can be collected.

More people use path and cycle networks/ routes because greenspaces are better linked together, including links to and between national way-marked routes.

Communities across Scotland understand and engage with their greenspaces and their improvement. Communities want to influence green infrastructure development and feel ownership and empowerment to use greenspaces to their full potential. Communities feel positive about the Green Infrastructure investment and understand how it benefits them and want to engage with it and share their experience.

Communities close to or affected by green infrastructure are engaged and involved in the planning, management, improvement and use of their greenspaces. They see green infrastructure as a positive factor in the way their place functions and feel that the green elements of their environment add to their quality of life. Communities affected by green

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[37] http://www.scotland.gov.uk/Publications/2009/05/20145602/0
[38] http://www.scotland.gov.uk/Topics/Environment/climatechange/scotlands-action/climatechangeact

infrastructure improvements want to celebrate the improvements, and other communities are aware of and feel welcome to enjoy and experience the greenspaces.

5.1   Policy and Legislation

The Scottish Government's Programme for Government 2014/15 highlights the issues of prosperity, fairness and participation, and includes a chapter on "*passing power to our people and communities*". This builds on the work of the Christie Commission[39] which concluded that a radical change in the design and delivery of public services is necessary to tackle the deep-seated social problems that persist in communities across Scotland.

It also reflects a growing recognition within Government and more widely that the transformation of public services can only happen by "*engaging and empowering people, enabling them to actively shape decisions which affect them and their communities*".

This agenda is now reflected in the Community Empowerment (Scotland) Act 2015 and the Land Reform Bill.

5.2   Community empowerment and land reform

When people feel they can influence what happens in their community and can contribute to delivering change, there can be many benefits. Communities can often achieve significant improvements by doing things for themselves, because they know it will work for them. They become more confident and resilient. There are often opportunities for people to gain new skills and for increased employment as well as improved access to services and support.

Former Chief Medical Officer, Harry Burns, talks about the complex inter-relationships between economic status and illness[40]: "*Learning to make the world predictable and understandable and learning that you have control over it. Developing the assets that local communities have, which sustain and create health, will contribute to Antonovsky's concept of coherence. I would go further. I am a doctor, I have to talk about health but I would argue here that what we are talking about is not about health improvement. It is something more significant. It is life improvement. Health is just something that emerges from a fair and civilised society, where everyone looks after each other. Individuals who live in that society begin to learn how it works, begin to manage their place in it and begin to participate in the life within their community. They are likely to be in control and are likely to feel well. So this is about getting to the heart of what people are doing in Scotland to create that fair and civilised society. If we can't look after children and give them a proper kind of nurturing environment then we are far from being a civilised society.*"

The Scottish Government recognises through The Community Empowerment (Scotland) Act 2015, that empowering communities and community-led action is key to achieving improved outcomes. Evidence shows that the most successful projects are done with local communities and "*communities of interest*". These include people and groups who are committed to a particular activity. From raising awareness about opportunities to engage

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[39] Commission on the Future Delivery of Public Services, 2011
[40] http://www.gov.scot/resource/0040/00403544.pdf

with local projects, through to involvement with projects as a volunteer or user, to being part of the future management decision making process, local communities will be involved in project delivery, effective community engagement is critical to the regeneration of our most disadvantaged communities and building ownership of the natural environment and local greenspaces.

The natural environment is a part of local identity and heritage, with accessible greenspaces providing community places that are inclusive and free to use. In the UK, the vast majority of people believe that greenspaces provide a focal point for their communities.

The Scottish Community Action Plan – Celebrating Success: Inspiring Change[41] defines community empowerment as *"a process where people work together to make change happen in their communities by having more power and influence over what matters to them"*. Important outcomes for the Community Empowerment Action Plan are:

- Increased confidence and skills amongst local people;

- higher numbers of people volunteering in their communities;

- higher levels of satisfaction with quality of life in a local neighbourhood;

- giving people a long term stake in the future of their communities; and

- confirming and strengthening community pride.

5.3   Community Empowerment (Scotland) Act 2015

Community Planning is a process which helps public agencies to work together with the community to plan and deliver better services which make a real difference to people's lives.

The aims of Community Planning in Scotland are:

- making sure people and communities are genuinely engaged in the decisions made on public services which affect them; allied to

- a commitment from organisations to work together, not apart, in providing better public services

There are two further key principles in addition to the two main aims outlined above:

- Community Planning as the key over-arching partnership framework helping to co-ordinate other initiatives and partnerships and where necessary acting to rationalise and simplify a cluttered landscape;

- The ability of Community Planning to improve the connection between national priorities and those at regional, local and neighbourhood levels.

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[41] http://www.gov.scot/Resource/Doc/264771/0079288.pdf

The Community Empowerment Act updates and simplifies legislation on allotments. It requires local authorities to take reasonable steps to provide more allotments if waiting lists exceed certain trigger points and ensures appropriate protection for local authorities and plot-holders. Provisions are made to allow the size of an allotment to be agreed between the person requesting an allotment and the local authority and to require fair rents to be set.

5.4   Community engagement good practice

There are many good practice guides to public participation. The National Standards for Community Engagement[42] sets out best practice guidance for engagement between communities and public agencies.

The purpose of the resource: 'Co-production – how we make a difference together' [43] is to support practitioners and public service leaders to better understand: what is co-production and how co-production can help deliver outcomes which matter to people; the importance of co-production within the Scottish policy landscape; and the support available to embed this way of working across our public services.

LEAP [44] is designed to be a useful tool in all aspects of project, programme and policy planning and development. The user-friendly software encourages users to ask critical questions about their work, it supports joint working and ensures that all those with a stake in the project are involved and are working to a shared agenda. The software will help to: "*Identify the difference you intend to make; Plan more effectively; Work in partnership with each other and members of the community; Learn and apply the lessons from your experience*". LEAP users can generate reports at key stages of the project/programme and are supported with helpful advice which enables them to assess the need or issue, plan the approach and monitor the process through to evaluating the outcomes. The software can be used by community organisations, local authorities, agencies including NHS and regeneration, voluntary sector organisations, and policy makers.

VOiCE [45] is planning and recording software that assists individuals, organisations and partnerships to design and deliver effective community engagement. VOiCE can be used to support a range of participation from overall area regeneration to specific concerns of users of particular services. VOiCE enables all users to employ a common system for analysing, planning, monitoring, evaluating and recording their community engagement. VOiCE is published by the Scottish Government as part of its support for implementation of the National Standards for Community Engagement. In relation to particular community engagement initiatives, "*VOiCE support you to: Reflect on what you are trying to achieve; Develop plans that relate to your purpose; Monitor progress in implementing your plan; Evaluate the process and outcomes; and Learn lessons for future activity*".

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[42] http://www.scotland.gov.uk/Resource/Doc/94257/0084550.pdf
[43] http://www.scdc.org.uk/news/article/useful-summary-community-empowerment-bill/
[44] http://www.planandevaluate.com/
[45] http://www.voicescotland.org.uk/

Another example from the United States is the *Good practice public participation (empowerment and engagement)[46]*, which recommends:

- Public participation is based on the belief that those who are affected by a decision have a right to be involved in the decision-making process;

- Public participation includes the promise that the public's contribution will influence the decision;

- Public participation promotes sustainable decisions by recognizing and communicating the needs and interests of all participants, including decision makers;

- Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision;

- Public participation seeks input from participants in designing how they participate;

- Public participation provides participants with the information they need to participate in a meaningful way;

- Public participation communicates to participants how their input affected the decision.

6. Outcome 4 – Increasing place attractiveness and competitiveness

Places are more attractive to live, work and invest in and more economically competitive as a result of green infrastructure improvements. There are more people using the greenspace and more people say that the greenspace meets their needs.

Greenspace provision has increased and enhanced, and deficits in access to greenspace for the most deprived communities are addressed. The quantity of vacant and derelict land is reduced and is transformed into positive and productive greenspace where communities need and want it.

Improvements in green infrastructure underpin and complement activities to increase economic activity in our most deprived communities. Businesses are attracted to locate in the area and local businesses emerge to make use of the greenspace resource. People feel confident and empowered within their communities to use their greenspaces for work, education and leisure. More people take regular exercise before, during and after work and school, and so are healthier and more productive.

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[46] http://www.iap2.org/?page=A4

6.1   Natural capital, resource efficiency and low carbon

Communities across Scotland benefit from the goods and services that our natural environment provides, including food, renewable energy, water purification, flood mitigation and places for recreation, education and inspiration. Protecting and enhancing this stock of natural capital, which includes our air, land, water, soil and biodiversity and geological resources is fundamental to a healthy and resilient economy. It also supports sectors such as agriculture, forestry, fisheries, tourism and renewables.

The value of nature to people and the economic importance of natural systems have been demonstrated by two studies: The Economics of Ecosystems and Biodiversity (TEEB, 2010) and the UKNEA (2011). These evaluated the benefits that flow from nature (ecosystem services), giving a measure of the value of natural capital.

6.2   Preventative spend

The Christie Commission advised that "*we are clear that our system of public service delivery is in need of a significant transformation. Above all, we need to design and deliver services with and for people, rather than forcing people into pre-determined systems*".

A key goal of this process should be to nurture and encourage the many new approaches which are already harnessing and utilising the resources and energies of a significant number of communities across Scotland. What distinguishes these positive approaches is that they are grounded in people's lives, and the lives of communities (of place and of interest). Typically, people, communities and services work together to decide priorities and how to achieve their delivery while the focus is on fitting services to people, not people to services. They also maximise all the resources and assets available, and the process itself builds the capacity of all those involved.

The joint statement from Scottish Government and COSLA[47] recognises that only by "*seeking maximum benefit for deprived areas from wider economic development and physical regeneration, will all of Scotland's communities have improved access to opportunity and a better quality of life.*"

Achieving a Sustainable Future: Regeneration Strategy[48] states that "*Our vision is a Scotland where our most disadvantaged communities are supported and where all places are sustainable and promote well-being*" and, "*this vision can only be delivered if regeneration is approached in a holistic way by addressing the economic, physical and social needs of our communities.*"

6.3   Outdoor Play

The ambition of Scotland's Play Policy[49] is to make Scotland the best place to grow up. A nation which values play as a life-enhancing daily experience for all our children and young people, in their homes, nurseries, schools and communities. We want all children and young

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[47] http://www.gov.scot/Resource/Doc/1031/0088727.pdf
[48] http://www.gov.scot/Publications/2011/12/09110320/0
[49] http://www.gov.scot/resource/0043/00437132.pdf

people to enjoy high quality play opportunities, particularly outdoor free play in stimulating spaces with access to nature, on a daily basis. We need to ensure that opportunities for outdoor free play are easily accessible in the community.

Everyone should have access to high quality greenspace for health and recreation[50] including local play space and greenspaces, improving play opportunities for children and removing barriers to play[51], and better quality walking environments with attractive, well designed and managed built and natural spaces[52]. Older people could improve health and minimise social isolation through better and safe access through the design of local built and outdoor environments[53].

Natural/functional moment in humans affects which genes we express and our overall health and well-being. Movement in all planes (i.e. 3D or whole body movement) is thought to be more beneficial (lowering blood pressure, abating joints and other musculoskeletal injuries) than movement in one plane, such as traditional exercise (e.g. Cycling). Providing opportunities for children and adults to move more naturally in more complex and dynamic ways could bring significant physical and mental health benefits.

6.4   Outdoor Learning

Outdoor learning can include, amongst other activities, cultural visits, science and geography fieldwork, environmental and countryside education, outdoor and adventurous group activities, learning through outdoor play, and visits to museums and heritage sites. It offers challenge, enjoyment, coherence and relevance, and remains essential to children and young people's health development and wellbeing. Learning outdoors provides children and young people with rich and varied opportunities for resourcefulness, inventiveness and imagination. It is therefore vital that establishments maximise children's opportunities to learn out of doors. Education Scotland[54] states that the journey through education for any child in Scotland must include opportunities for a series of planned, quality outdoor learning experiences.

The Curriculum for Excellence states that every child is entitled to outdoor learning. This means regular immersion in natural landscapes. The outdoor learning self-evaluation resource [55], is part of the Curriculum for Excellence through Outdoor Learning, developed by the Outdoor Learning Strategic Advisory Group (2008–2010) and produced by Learning and Teaching Scotland. The resource is specifically designed to support teachers and educators in pre-school centres and primary, special and secondary schools and Community Learning and Development (CLD) to evaluate the potential of their work to help children and young people learn outdoors. Staff in other sectors who are involved in the delivery of outdoor learning for children and young people will also benefit from using this resource.

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[50] http://www.scotland.gov.uk/Publications/2011/12/09110320/11
[51] http://www.scotland.gov.uk/Publications/2009/01/13095148/2
[52] http://www.scotland.gov.uk/Resource/0045/00452622.pdf
[53] http://www.scotland.gov.uk/Topics/People/Equality/18501/Experience
[54] http://www.educationscotland.gov.uk/learningandteaching/approaches/outdoorlearning/
[55] http://www.educationscotland.gov.uk/Images/SelfEvaluationResource_tcm4-596559.pdf

7. Outcome 5 – Improving health and wellbeing

Greenspace becomes a central feature of people's lives and they recognise and welcome the role it plays in their day to day wellbeing and happiness. Communities' health and wellbeing improves through the use of greenspace.

Green infrastructure close to where people live provides health and recreational benefits and enhances their quality of life through improving the quality of their local environment and their sense of place. People of all ages and abilities feel safe and confident to use and enjoy their greenspace. More people benefit from recreation and formal and informal exercise in greenspace. People's mental health and wellbeing is better as a result of increased contact with nature and with their community.

Healthcare professionals increase their use of green prescribing as an alternative to drugs or other therapies. Greenspace helps patients, visitors and staff to see their hospital or medical centre as a positive place.

7.1 National Performance Framework

The National Performance Framework states that "*We can make a significant contribution to the Government's Purpose by increasing the amount of time people spend in good health, by increasing their ability to take part in the workforce, by improving productivity and through population growth. In combination, these factors will promote economic sustainability.*"[56] One of the National Performance Indicator included in the National Performance Framework is "*Increase people's use of Scotland's outdoors*".

There is a growing recognition of a need to shape places which nurture positive health, well-being and resilience. The Scottish Government wants to see more people being physically active and increased use of Scotland's outdoors, leading to longer and healthier lives. This needs to involve tackling deep-seated health inequalities and addressing the needs of disadvantaged groups and deprived areas. The NFP is supported by a range of policies, for example, see Good Places, Better Health[57]; Equally Well[58]; NHS Health Scotland corporate strategy[59].

7.2 The Christie Commission on the Future Delivery of Public Services

The Christie Commission made a number of recommendations for public authorities relevant to health including:

- prioritise preventative measures, to reduce demand and lessen inequalities;

- identify and target the underlying causes of inter-generational deprivation and low aspiration;

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[56] http://www.gov.scot/About/Performance/scotPerforms/outcome/healthier
[57] http://www.scotland.gov.uk/Resource/Doc/254447/0075343.pdf
[58] http://www.scotland.gov.uk/Resource/Doc/229649/0062206.pdf
[59] http://www.healthscotland.com/uploads/documents/5792-CorporateStrategy.pdf

- recognise that effective services must be designed with and for people and communities.

7.3   The Equally Well Review 2010

The Equally Well Review[60] emphasized the importance of health and wellbeing and preventative action in reducing inequalities. The review noted the impact that climate change could have on health and wellbeing of those most vulnerable to health inequalities. It noted that while whole population strategies and initiatives can be worthwhile, they also have the potential to increase relative inequalities. It included a recommendation that The Government, NHS Boards and other public sector organisations should take specific steps to encourage the use and enjoyment of green space by all, with a view to improving health.

7.4   The Scottish Health Survey 2014: Volume 1: Main Report

The health benefits of a physically active lifestyle are well recognised[61]. Being active on a regular basis puts a person at reduced risk of chronic conditions of particular concern in Scotland, including cardiovascular disease, obesity, and type 2 diabetes[62]. The benefits of being regularly active extend beyond physical health, with evidence that certain forms of increased activity may also improve mental wellbeing, another key health priority in Scotland[63]. Exercise is now recommended by The Royal College of Psychiatrists as a treatment for depression in adults[64], and the Scottish Intercollegiate Guidelines Network (SIGN) national clinical guidelines for non-pharmaceutical management of depression states that structured exercise programmes may be an option for depressed people[65]. Among older people, physical activity is associated with better health and cognitive function and can reduce the risk of falls in those with mobility problems[66][67].

High activity levels in childhood provide both immediate and longer-term benefits, for example by promoting cognitive skills and bone strength, reducing the incidence of metabolic risk factors such as obesity and hypertension, and setting in place activity habits that endure into adulthood.[68]

The World Health Organisation (WHO) estimated, in 2008, that 3.2 million deaths per year could be attributed to low physical activity levels[69]. It is estimated that in Scotland low

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[60] http://www.gov.scot/Publications/2010/06/22170625/0
[61] http://www.gov.scot/Publications/2015/09/6648
[62] http://www.gov.scot/Publications/2015/09/6648/318787
[63] http://www.gov.scot/Publications/2015/09/6648/318787
[64] http://www.gov.scot/Publications/2015/09/6648/318787
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[67] http://www.gov.scot/Publications/2015/09/6648/318787
[68] http://www.gov.scot/Publications/2015/09/6648/318787
[69] http://www.gov.scot/Publications/2015/09/6648/318787

activity contributes to around 2,500 deaths per year and costs the National Health Service £94 million annually[70].

Child Activity Levels

- In 2014, 76% of children aged 2-15 were active for at least 60 minutes a day (including school-based activity), a similar level to 2013 (75%).

- The proportion of children meeting the physical activity guidelines had increased since 2008 regardless of whether school-based activity was included or excluded.

- As in previous years, a significantly lower percentage of girls than of boys met the physical activity guidelines in 2014, irrespective of whether school-based activities were included or not.

- The difference between girls and boys in meeting the physical activity guidelines was particularly pronounced for those aged 2-4 and 13-15 where participation for girls was considerably lower.

- The proportion of children who had participated in sport in the last week was 67%, a similar level to that seen in recent years (66% in 2012, 67% in 2013) but a decline on the 73% figure in 2009.

- There was no significant difference overall in participation by boys (68%) and girls (65%) in sport in the last week, but participation by those aged 13-15 was significantly higher for boys (71%) than girls (56%).

Adult Activity Levels

- In 2014, 63% of adults were active at the recommended level (150 minutes of moderate or 75 minutes of vigorous activity per week), similar to the proportions in 2012 (62%) and 2013 (64%). One in five (22%) adults did fewer than 30 minutes of moderate or 15 minutes of vigorous activity per week.

- A significantly smaller proportion of women than men met the physical activity guidelines (59% and 68% respectively).

- The proportion of adults meeting the guidelines was highest for those aged 25-34 (79%), and steadily declined with increasing age with 26% of adults aged 75 and above meeting the requirement and 56% of the same age group having very low activity levels.

- The most popular sporting activities in 2014 were working out a gym (17%), exercises (17%), swimming (14%) and running (13%).

- Participation in sports tended to decline with age, with 78% of those aged 16-24 taking part and 22% of those aged 75 and above.

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[70] http://www.gov.scot/Publications/2015/09/6648/318787

7.5   National Physical Activity Implementation Plan

The National Physical Activity Implementation Plan[71] lists key targets relating to use of the outdoors as a resource for physical activity and health promotion including:

- Urban and rural environments will be designed to increase physical activity;

- Increased use of Scotland's outdoors.

7.6   Scottish Biodiversity Strategy

One of the 6 Big Steps for Nature set out in the Scotland's Biodiversity - Route Map to 2020 is:

- Quality greenspace for health and education benefits – to ensure that the majority of people derive increased benefits from contact with nature where they live and work.

Priority Projects have been specified to deliver each of the 6 Big Steps for Nature, and Priority Project 7, is key in terms of making the connection between the availability and quality of greenspace and people's health and wellbeing.

Priority Project 7: Developing Scotland's Natural Health Service

Aim: NHS Health Boards to promote health benefits from physical outdoors activity and contact with nature, with green exercise routinely prescribed by health professionals as part of the physical activity pathway.

Target: Improve greenspace quality and use on at least one hospital or health care facility in each NHS health board in mainland Scotland.

On-going work: Developing and promoting a green exercise tool-kit for use by the health and environment sectors; Delivering a NHS Greenspace Demonstration Project; providing quality greenspace for use by patients, visitors and staff for treatment, recovery, recreation and relaxation.

Planned work: Deliver 2nd phase of the NHS Greenspace Demonstration Project to complete mainstreaming of greenspace provision and use on the NHS estate. Support better mapping, provision and use of green exercise opportunities as part of three area-based initiatives with health boards and local authorities to increase physical activity.

7.7   National Walking Strategy

The National Walking Strategy[72] sets the aspiration of achieving levels of walking on a par with the best performing countries such as the Netherlands, Norway and Switzerland. In the latter, well over 30% of journeys are walked. To achieve this, three objectives are identified:

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[71] http://www.scotland.gov.uk/Publications/2014/02/8239

- Create a culture of walking where everyone walks more often as part of their everyday travel and for recreation and well-being;

- Better quality walking environments with attractive, well designed and managed built and natural spaces for everyone;

- Enable easy, convenient and safe independent mobility for everyone.

7.8   Route Map Towards Healthy Weight

The 'Route Map Towards Healthy Weight' states that our bodies are designed to conserve energy if we simply start to consume fewer calories. Efforts to support healthy eating must be complemented by opportunities to expend more energy. It also identifies that "*creating cycle pathways and walking paths; children's play areas… and leisure facilities; the protection and enhancement of safe green spaces*" are important actions in combatting obesity.

Let's Make Scotland More Active: A strategy for physical activity[73] asserts that inactivity accounts for over a third of deaths from heart disease. Beneficial physical activity does not need to be a sport or strenuous; it can include walking and gardening.

7.9   Health Issues in the Community (HIIC)

Health and social inclusion policy developments have resulted in an increase in initiatives that target health inequalities and community involvement in health (e.g. community health projects and healthy living centres). Health Issues in the Community[74], otherwise known as HIIC is a training programme aimed at increasing community capacity, increasing community participation, and establishing / consolidating community development approaches to tackling inequalities in health.

8.   Horizontal Themes – Environmental Sustainability, Equal Opportunities and Social Inclusion

The environment in which people live and the prosperity that they enjoy have significant impacts on their health and well-being. The way greenspace and places are planned, managed and used ensures that they provide a wide range of environmental benefits to local communities and helps them feel more secure and resilient. Barriers to advancement economically, socially and in outdoor workplaces are reduced for disadvantaged groups.

All sectors within communities feel empowered and confident to use their local greenspaces. Greenspaces and places are designed and managed so that everyone feels welcome and that there is something for them. All sections of local communities have

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[72] http://www.scotland.gov.uk/Publications/2014/02/8239

[73] http://www.gov.scot/Publications/2003/02/16324/17895
[74] http://www.chex.org.uk/what-we-do/training-development-support/hiic/5

opportunities to get involved with and use their local greenspace in ways that suit them. The whole community feels more in control of their local environment, more influential and better connected.

Enjoying the outdoors has become more common and is part of our culture. Communities are involved in management of their local greenspace, contributing to developing an outdoors culture.

8.1 The National Performance Framework

The Horizontal themes correlate well with the National Performance Framework, through the Wealthier and Fairer and the Safer and Stronger objectives, including a number of National Outcomes, including:

- Our public services are high quality, continually improving, efficient and responsive to local people's need;

- We have strong, resilient and supportive communities where people take responsibility for their own actions and how they affect others;

- We live in well-designed, sustainable places where we are able to access the amenities and services we need.

8.2 Community Empowerment

The Community Empowerment Act provides a strong means to address social inclusion with its new focus on disadvantage at neighbourhood level and requirement for Community Planning Partnerships to draw up Locality Plans. It also complements this through aiming to strengthen community engagement in delivering public services and managing assets, including land.

A theme running through the Community Empowerment Act is what the Christie Commission described as co-production – the participation of communities in the design and delivery of the public services for those communities. Achievement of this ambition may require the machinery of government to adopt a more enabling role than its current focus on delivery.

8.3 Sustainable Development

The goal of sustainable development is to enable all people throughout the world to satisfy their basic needs and enjoy a better quality of life without compromising the quality of life of future generations.

Sustainable development is integral to the Scottish Government's overall purpose - to focus government and public services on creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.

8.3.1 *Green Infrastructure and sustainable development*

Delivering improvements in local greenspace and to local green infrastructure will help communities and neighbourhoods become more sustainable through improvements to: their local physical environment and consequently increasing environmental benefits and

services; their local economic performance through increased confidence and skills; and their communities' social coherence and identify.

8.4   Equal Opportunities and Social Inclusion

The Scottish Government has a multi-dimensional approach to socio-economic inequality, reflected in the National Performance Framework around which the entire public sector in Scotland is aligned. Equally Well, Scotland´s framework on health inequalities, together with Achieving our Potential and the Early Years Framework, provide the means for the public sector to tackle the root causes of health inequalities in Scotland.

The Child Poverty Strategy for Scotland sets out the Scottish Government's approach to tackling child poverty with three main priorities around maximising household resources, improving children's wellbeing and life chances and well designed, sustainable places.

In addition, the Christie Commission report is a key driver for policy and budget allocation, since it highlights developments on inequalities and the need for preventative spend.

Scotland´s Regeneration Strategy sets out a £175 million programme of investment to support the country´s most disadvantaged communities, transforming the prospects of the people who live there.

There is a clear relationship between social inequalities and poor health. Based on survey data we know that income is strongly associated with some health risk factors, such as smoking, diet and obesity in women. For others (such as physical activity and alcohol) the association is more complex. People on low income (especially young adults) have poorer mental health, worse self-rated health and higher levels of mortality (Gordon et al, 2010)[75].

The Better Health Better Care: Action Plan makes explicit the commitment of the NHS in 'Helping People to Sustain and Improve Their Health, Particularly in Disadvantaged Communities', including actions relating to anticipatory care, housing, regeneration and eradication of child poverty.

8.4.1   The Equality Act 2010

The Equality Act 2010 brought together previous equality legislation into a single Act of Parliament and includes a general duty for public bodies to have due regard to the need of eliminate unlawful discrimination, advance equality of opportunity and foster good relations.

The 2010 Act introduced a new public sector equality duty which replaces the previous three equality duties for race, disability and gender. The new duty applies to the relevant protected characteristics – age, disability, gender reassignment, pregnancy and maternity, race, religion and belief, sex and sexual orientation and marriage and civil partnership.

8.4.2   Equality Evidence Toolkit for Public Authorities

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[75] http://www.healthscotland.com/equalities/socio-economic-inequalities.aspx

This toolkit[76] aims to help public authorities source and use equality evidence to meet requirements of The Equality Act 2010 (Specific Duties) (Scotland) Regulations 2012. This evidence can be used for: reporting progress towards equality outcomes; equality mainstreaming; informing equality impact assessments; and gathering and use of employee information.

8.4.3   Active Scotland Outcomes

The Active Scotland Outcomes Framework describes Scotland's ambitions for sport and physical activity over the next ten years. It sets out a vision and six outcomes with 19 associated indicators to enable high level assessment of progress and a commitment to equality.

8.4.4   Active Scotland Outcomes: Indicator Equality Analysis

The report encompasses the characteristics protected under legislation as well as socio-economic status (SES), in recognition of the impact of broader inequalities in Scotland, particularly for those living in the most deprived areas.

The main messages to emerge from this work include that key at risk groups include the elderly, those with limiting conditions or disabilities, those with lower SES (particularly re sports participation and environmental factors), teenage girls and women of Asian origin:

- The inequality in sports participation by deprivation in children is widening;

- The inequality by gender in physical activity has narrowed substantially between teenage boys and girls since 2008, largely driven by girls becoming more active;

- Walking is an important leveller of inequalities but differences still exist, particularly for those with disabilities. When walking participation is not included in sports and exercise participation figures, inequalities between groups are generally much wider;

- Retirement and primary-to-secondary school transitions present key moments at which to influence physical activity in old age and children respectively;

- School activity becomes increasingly important as children get older. At age 13-15, fewer girls and boys are inactive when school activity is included and the inequality difference by age in young people has been decreasing since 2008, but only when school activity is included;

Access to services (including leisure services) has been identified by the Equalities and Human Rights Commission (EHRC) as one of seven significant inequalities in Scotland. The evidence points to particular issues with use and satisfaction amongst disabled people, those aged over 60 years, ethnic minorities, people identifying with non-Christian religions, LGBT groups and people on low incomes suggesting progress is needed around facilities providing the right opportunities for diverse communities.

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[76] http://www.gov.scot/Resource/0047/00474223.pdf

The equality evidence base for physical activity is variable. There is a particular lack of data on ethnicity, sexual orientation, pregnancy/maternity and religion. Also, although there is data on disability, at present it is combined across different types of disabilities which obscures a more nuanced understanding.

Many of the protected characteristics interact with each other. A person may have several protected characteristics and some characteristics make other ones more likely.

8.4.5   Equality Measurement Framework

The [Equality and Human Rights] Commission has been working with the Government Equalities Office, the Scottish Government, the Welsh Assembly Government, the Office for National Statistics and a range of other stakeholders and subject experts to develop a measurement framework that can be used to assess equality and human rights across a range of domains relevant to 21st century life.

These domains focus directly on those things in life that people say are important for them to actually do and be. The framework monitors the central and valuable things in life that people actually achieve - such as enjoying an adequate standard of living, being healthy, having good opportunities for education and learning, enjoying legal security, and being free from crime and the fear of crime. It is particularly concerned with the position of individuals and groups with regard to characteristics such as age, disability, ethnicity, gender, religion or belief, sexual orientation, transgender, and social class.

It is important to note at the outset that the Equality Measurement Framework (EMF) is not a performance measurement framework. Rather it provides a baseline of evidence for evaluating progress and deciding priorities. The framework will enable the Commission to discharge its legal duties to monitor social outcomes under the Equality Act 2006. It will also provide data that may help Government and other public bodies prioritise their activities to meet the public sector duties on equality. As data is collected to fill the framework it is planned that a web-based tool will be developed to make the data accessible and useful to all groups and individuals with an interest in promoting equality and human rights in Britain.

The development of the EMF has built on extensive consultation over the last three years and will contribute to ensuring that appropriate systems for statistical monitoring are further developed and secured.

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad