



INVESTING FOR GOOD

OUTCOMES MAP

CONSERVATION OF THE NATURAL ENVIRONMENT AND CLIMATE CHANGE

February 2013: Version 1.0

MAPPING OUTCOMES FOR SOCIAL INVESTMENT

This is one of 13 outcomes maps produced by Investing for Good in partnership with NPC, the SROI Network and Big Society Capital. Each map examines a particular issue area or domain, and aims to document the relevant outcomes and indicators that are currently being measured by charities, government, academics and practitioners working in this field.

This map is not intended to be prescriptive about what you should measure; instead it aims to be a starting point for social investors, funders, charities and social enterprises thinking about measuring outcomes in this domain. Neither is it intended to be definitive or comprehensive: we plan to develop the maps further in future as we learn more about measurement practice in this area.

If you have any feedback or suggestions for how we could do this, please get in touch with Tris Lumley at NPC by emailing tris.lumley@thinkNPC.org.

Outcomes maps in this series

Housing and essential needs

Education and learning

Employment and training

Physical health

Substance use and addiction

Mental health

Personal and social well-being

Politics, influence and participation

Finance and legal matters

Arts and culture

Crime and public safety

Local area and getting around

Conservation of the natural environment and climate change

Shared measurement framework:

Conservation of the Natural Environment and Climate Change

Definition

We look at two major components of the Environment: Conservation and Climate Change. Conservation covers conservation of land or wildlife (biodiversity), conservation and consumption of resources (including water), and waste, recycling, and harmful waste (including attention to air quality). Climate change refers to significant and lasting change in the statistical distribution of weather conditions over time. For the purposes of this overview, we cover aspects pertaining to human influence on this process. Interventions may well address both local conservation issues and global climate concerns as part of one strategy. Conservation and Climate Change also have components relating to education and behaviour, advocacy, public awareness, policy change, research and sector development, and environmental technology.

Conservation and Climate Change are broken down into seven core areas:

1. Conservation of Natural Spaces and Heritage
2. Sustainable Agriculture
3. Energy
4. Green Building
5. Sustainable Transport
6. Waste, Recycling, and Harmful Waste
7. Water

Context

The conservation of the natural environment and climate change are issues increasingly at the forefront of social, economic and political discussion. Substantial evidence exists to demonstrate the negative effects of a deteriorating environment (for example, pollution, land destruction, waste and lack of clean water) on individuals and communities. Similarly, scientists are actively working to understand the broader changes in our climate (for example, rising temperatures and sea levels). Most agree that much of this is attributable to increased atmospheric concentrations of 'greenhouse' gases produced by human activities.

The UK Government published the Climate Change Risk Assessment (CCRA) in January 2012, which assesses the potential risks and opportunities for the UK arising from climate change. The CCRA represents a key part of the Government's response to the Climate Change Act 2008, which requires a series of assessments of climate risks to the UK, both under current conditions and over the long term. The key results from the CCRA suggest that in the long run (2050-2100) the UK is vulnerable to rising temperatures, extreme weather, flooding, water shortages and health threats to the most vulnerable of our society. The Department of Energy and Climate Change is the key area in the UK government dealing with climate change.

The Government has also published a Natural Environment White Paper detailing its vision for the natural environment over the next 50 years. The key ambitions and actions pertain to protecting and improving our natural environment, growing a green economy, reconnecting people and nature and international and EU leadership. The Department for Environment, Food and Agriculture (DEFRA) is the area in the UK government that deals with issues such as conservation, rural development, the countryside, biodiversity and sustainable agriculture.

The private sector, including for profit companies and charities, has developed mainly around, the development and sale of green energy, the use of organic farming methods, and local and national conservation efforts, with organisations taking on a stewardship role in relation to certain natural environments and the biodiversity of their ecosystems.

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Vulnerable groups

Key vulnerable groups include:

The poor (individuals and communities/countries) – Relationship between poverty (economic growth and productivity) and the environment (i.e. lack of energy, water, sustainable agriculture, etc)

Agriculture based (individuals and communities/countries) – Relationship between economic growth (agriculture based economies) and the environment (i.e. climate change, extreme weather, etc).

Urban-dwellers – Relationship between pollution, waste and physical health.

Future generations – Consequences of actions today that increase pollution and exacerbate climate change on the lives of future generations.

Key outcomes

- **Conservation of Natural Spaces and Heritage** – The protection of natural resources and the preservation of wilderness.
- **Increase in Sustainability of Agriculture** - Ensuring the continuing availability to the consumer of adequate supplies of wholesome, varied and reasonably priced food produced within accordance with generally accepted environmental and social standards and while ensuring effective protection and conservation of the natural environment.
- **Improved energy systems**
 - **Increased renewable energy generation** – Increase in generation and use of energy that comes from natural resources (e.g. wind, water, sun, geothermal heat) which are naturally replenished.
 - **Increased energy efficiency** – Increase in efforts to reduce the amount of energy required to provide products and services.
- **Construction (or Renovation) of Green Buildings** – Sustainable building design, construction and operation leading to a building's positive environmental performance.
- **Increase in Sustainability of Transport** – any means of transport with low impact on the environment, includes non-motorised transport (e.g. walking and cycling) and building or protecting urban transport systems that are fuel-efficient, space-saving and promote healthy lifestyles.

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- **Improvements in Waste, Recycling, and Harmful Waste** – reductions to the volume of waste being created (and therefore resources consumed), increases in the volume of waste being recycled (and therefore resources conserved), and the collection, transport, safe processing or disposal and monitoring of waste materials in order to reduce their negative effects on health, the environment or aesthetics.
- **Improvements in water availability, use and efficiency** Increase the amount of water available for consumption while reducing the amount of water required to the minimal amount feasible for any particular action.

Summary of typical interventions

- **Conservation of Natural Spaces and Heritage** - conservation (restoration) of natural spaces, areas of natural beauty or special scientific interest; transformation of derelict, uninspiring and wasted spaces; conservation (restoration) of sites and areas of historic interest or heritage value; protection of wildlife, plant species; provision of environmental protection (from flooding, erosion, local air quality etc.)
- **Sustainable Agriculture** – the use of agricultural practices that use the principles of ecology that have a site specific application and are designed in accordance with the principles of environmental sustainability.
- **Energy** – energy generation, energy consumption, energy savings and new renewable energy innovations.
- **Green Building** – construction and renovation of buildings with an environmental purpose
- **Sustainable Transport** – provision of sustainable transport alternatives (e.g. electric vehicle, car pool); encouraging use of sustainable transport
- **Waste, Recycling, and Harmful Waste** – production and recycling of general waste, consumption of materials, production and treatment of harmful waste
- **Water** – water use and efficiency, wastewater treatment.

Current approaches to measurement

The international attention that environmental issues have received, and the need they present for collaborative action, has fostered considerable work on establishing common measures, especially where these relate to tangible aspects of the environment and efforts toward its conservation and the mitigation of climate change.

Interventions relating to climate change most commonly relate to volumes of greenhouse gases, measured in tonnes of CO₂ (or CO₂ equivalent for gases such as methane (CH₄), nitrous oxide (N₂O), perfluorocarbons (PFCs), hydrofluorocarbons (HFCs), and sulfur hexafluoride (SF₆)). Reductions in CO₂ emissions may be validated and traded through the European Union Emission Trading Scheme (EU ETS) as Certified Emission Reductions (CERs). Attaining certification can present considerable regulatory demands and typically is

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used by larger industries. A less demanding mechanism by which CO₂ reductions can be traded is through the voluntary market, where voluntary carbon offsets may be accredited by various bodies. Here standards are less well-defined.

Notable bodies and approaches to measurement exist in the different core areas identified. In particular: in relation to sustainable agriculture in the UK, the Soil Association is the foremost certifier of organic farming and of soil protection measures; in relation to energy, renewable energy generation (measured in MWh) is overseen by Ofgem and accredited in the form of Renewables Obligation Certificates (ROCs), which may be traded; in relation to green building, BREEAM is the leading UK body in defining measures and accrediting buildings. The tables below set out measures and relevant bodies in greater detail for all of the seven core areas.

While specific tangible measures exist in certain areas, it is important to remember also more qualitative aspects of the environment, such as amenity, aesthetic quality, and many aspects of biodiversity and the health of ecosystems that do not break down into tonnes of CO₂, hectares of land, MWh of energy, cubic metres of landfill etc.. Here description and explanation can play a vital role alongside specific measures. When using specific measures, it is important also to remember that contemporary climate science is notably incomplete, and the precise effects and relations involved within both global and local ecosystems remain scientifically complex. Measurement must be viewed in this context, and specific established measures regarded therefore as useful, but not as presenting fully defined solutions.

Key sources

Department for Environmental, Food and Rural Affairs (DEFRA), <http://www.defra.gov.uk/>
New Sustainable Development Indicators (2012), DEFRA, <http://sd.defra.gov.uk/new-sd-indicators/> and <http://sd.defra.gov.uk/new-sd-indicators/proposed-indicators/>
Previous Sustainable Development Indicators (2005-2010) <http://sd.defra.gov.uk/documents/SDI-Consultation-Annex%20II-previous-SDIs%20.pdf>

Department of Energy and Climate Change (DECC), <http://www.decc.gov.uk>
DECC Statistics, <http://www.decc.gov.uk/en/content/cms/statistics/statistics.aspx>

Global Reporting Initiative (GRI)
GRI, Sustainability Reporting Guidelines, <https://www.globalreporting.org/resourcelibrary/G3.1-Sustainability-Reporting-Guidelines.pdf>
GRI, Indicator Protocols Set, Environment (EN), <https://www.globalreporting.org/resourcelibrary/G3.1-Environment-Indicator-Protocols.pdf>

The Carbon Disclosure Project (CDP), <https://www.cdproject.net/en-US/Pages/HomePage.aspx>
CDP Scoring Methodology, <https://www.cdproject.net/Documents/Guidance/CDP-2012-Scoring-Methodology.pdf>

The Building Research Establishment Environmental Assessment Method, www.breeam.org

Harvard Green Office, <http://www.green.harvard.edu/green-office>

The Carbon Trust, www.carbontrust.com
Good Practice Guide: A Strategic Approach to Energy and Environmental Management.
Carbon Trust, Energy Management Guide, http://www.carbontrust.com/media/13187/ctg054_energy_management.pdf

Impact Reporting and Investment Standards (IRIS), <http://iris.thegiin.org/>



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Related outcomes

- Related outcome: [HOUSING AND ESSENTIAL NEEDS](#)
- Related outcome: [PHYSICAL HEALTH](#)
- Related outcome: [LOCAL AREA AND GETTING AROUND](#)
- Related outcome: [POLITICS, INFLUENCE AND PARTICIPATION](#)

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Level 1 outcome	Level 2 outcome	Indicators	Existing measures	Source and use	Stakeholders	Notes
Conservation of Natural Spaces and Heritage	conservation of natural spaces, heritage and biodiversity	<p>area of natural space (e.g. habitats, forests, water bodies, coastlines) conserved</p> <p>area of natural space restored or created (area of derelict or brownfield sites converted)</p> <p>number of trees planted</p> <p>number / area of heritage sites protected (restored)</p> <p>population numbers (changes) of wildlife / plant species</p> <p>number of species protected</p> <p>response from sector, special interest groups on value and effectiveness of conservation</p> <p>air quality measures, diminished environmental risk</p>	<p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p> <p>IRIS Environmental Indicators</p>	<p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.</p>		

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	<p>awareness, access and inclusiveness of natural space / heritage</p>	<p>awareness surveys</p> <p>distribution of information (publications, website hits, use of community resources to propagate word of mouth)</p> <p>number of pieces published in the media associated with the conserved space</p> <p>number of visitors to conserved space</p> <p>cost of entry</p> <p>number of visitors from minority and disadvantaged groups</p> <p>number of special access / interest programmes</p>	<p>DEFRA Sustainable Development Indicators</p>	<p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p>		
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	community feedback and involvement	<p>visitor feedback (volume, number of suggestions; changes implemented as a result of feedback)</p> <p>number of involvement groups / participative sessions held with community or visitor public</p>				
	education and research	<p>number of school visits to conserved space</p> <p>number of school children visiting conserved space</p> <p>number of educational programmes run (attendance)</p> <p>provision and distribution of information relating to the environment and heritage (number of leaflets distributed, documents downloaded etc.)</p> <p>involvement in policy making</p> <p>number of research documents published (sector / academic responses to research)</p>	DEFRA Sustainable Development Indicators	Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.		

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	community benefits	<p>number of community organisations using conserved space</p> <p>number of community events (e.g. walks, youth meetings, arts performances) taking place in conserved space (attendance)</p> <p>number of social enterprises using conserved space</p> <p>number of local people participating</p> <p>levels of volunteering</p> <p>increased social capital</p>	DEFRA Sustainable Development Indicators	Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.		
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	local economic benefits	<p>value of local spending by visitors to conservation area</p> <p>number of local jobs created</p> <p>number of local training opportunities, volunteering opportunities created</p> <p>increase in property values, land values</p> <p>public investment into the area (where conserved space identified as a contributing factor in investment decision)</p> <p>value and number of new local businesses (where conserved space identified as a contributing factor in location decision)</p>	DEFRA Sustainable Development Indicators	Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.		
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Increase in Sustainability of Agriculture	organic farming	<p>volume of organic produce</p> <p>area of land farmed sustainably</p> <p>associated reductions in greenhouse gas emissions and environmental damage (reductions in use of fertiliser, mitigation of soil erosion etc.)</p>	DEFRA Sustainable Development Indicators	Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.		
	locally grown food	<p>availability of farmer's markets</p> <p>availability of locally sourced food in shops</p>	DEFRA Sustainable Development Indicators	Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.		

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Improved energy systems	renewable energy generation	<p>MWh of renewable energy generated</p> <p>reduction in CO₂ emissions</p> <p>sale of Certified Emissions Reductions (CERs)</p> <p>retirement of Certified Emissions Reductions (CERs)</p> <p>lifetime greenhouse gas emissions (of project, installation, product)</p>	<p>Carbon Trust Carbon Footprint Calculation</p> <p>Carbon Disclosure Project</p> <p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p> <p>IRIS Environmental Indicators</p> <p>DECC Statistics</p>	<p>Carbon Trust has worked with hundreds of organisations around the world and produced thousands of carbon footprint assessments</p> <p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.</p> <p>DECC is the Department of Energy and Climate Change</p>		
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	energy efficiency	<p>use of energy from renewable sources</p> <p>amount (proportion) of renewable energy used</p> <p>amount of energy saved through efficiency improvements</p> <p>policies and initiatives introduced to improve energy efficiency</p> <p>related reductions in greenhouse gas emissions</p>	<p>Carbon Trust Carbon Footprint Calculation</p> <p>Carbon Disclosure Project Scores (Performance and Disclosure)</p> <p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p> <p>IRIS Environmental Indicators</p> <p>DECC Statistics</p>	<p>Carbon Trust has worked with hundreds of organisations around the world and produced thousands of carbon footprint assessments</p> <p>Carbon Disclosure Project provides a global system for thousands of companies and cities to measure, disclose, manage and share environmental information.</p> <p>Department for the Environment, Food and Agriculture (DEFRA) : Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and</p>		
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	research and development	number of publications number and impact of innovations developed	DEFRA Sustainable Development Indicators	Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.		
Construction (or Renovation) of Green Buildings	construction and renovation of buildings with an environmental purpose	number of units built / renovated to high environmental standards value and built area of units built / renovated to environmental standards related reductions in CO ₂ emissions lifetime greenhouse gas emissions (of project, building)	BREEAM Rating (Building Research Establishment Environmental Assessment Method) IRIS Environmental Indicators	BREEAM (or other e.g. LEED, Passivhaus) accreditation IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.	BREEAM sets the standard for best practice in sustainable design and has become the de facto measure used to describe a building's environmental performance. It can be used to assess any type of building anywhere in the world.	

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	core environmental focus areas for green buildings	<p>reductions in CO₂ emissions, pollution, consumption, waste</p> <p>percentage of building daylight, naturally ventilated</p> <p>increase in use of sustainable transport</p> <p>volume of water consumed, recycled</p> <p>volume of waste produced, recycled (proportion)</p> <p>area of brownfield or previously contaminated land reused</p> <p>populations of species of plants / animals conserved</p> <p>pollution levels</p> <p>building performance in use</p>	<p>BREEAM Rating</p> <p>IRIS Environmental Indicators</p>	<p>BREEAM (or other e.g. LEED, Passivhaus) accreditation</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.</p>		
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<p>Increase in Sustainability of Transport</p>	<p>sustainable transport</p>	<p>uptake of sustainable transport alternative</p> <p>increase in number of people walking, cycling, using public transport</p> <p>reduction in levels of road congestion</p> <p>reduction in levels of unsustainable company travel (air miles, car miles)</p> <p>related reduction in CO₂ emissions</p>	<p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p>	<p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p>		
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<p>Improvements in Waste, Recycling, and Harmful Waste</p>	<p>general waste and recycling</p>	<p>waste</p> <ul style="list-style-type: none"> • percent recycled • percent re-used • percent donated • amount (tonnes) to landfill <p>change in amount of waste going to landfill (reduction)</p> <p>materials</p> <ul style="list-style-type: none"> • amount of materials used • proportion of input materials from recycled / re-used sources 	<p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p> <p>IRIS Environmental Indicators</p>	<p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.</p>		
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	harmful waste, pollution	<p>greenhouse gas emissions (reductions); mass and type</p> <p>SO, NO, PM etc., ozone depletors</p> <p>toxic and chemical emissions to water, soil (reductions); volume and type</p> <p>hazardous waste, spills (prevention)</p> <p>initiatives on mitigation</p> <p>volume of harmful waste responsibly disposed of (remediation of environmental damage from pollution)</p> <p>impact on locality (measures of local pollution levels and consequences)</p>	<p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p> <p>IRIS Environmental Indicators</p> <p>DECC Statistics</p>	<p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.</p>		
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<p>Improvements in water availability, use and efficiency</p>	<p>water use and efficiency</p>	<p>volume of water consumed</p> <p>volume of water recycled</p> <p>volume of rainwater harvested</p> <p>volume of water saved through efficiency schemes</p>	<p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p> <p>IRIS Environmental Indicators</p>	<p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.</p>		
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	wastewater	<p>volume of wastewater discharged to sewer or other water bodies (if applicable)</p> <p>impact on locality (measures of local pollution levels and consequences)</p>	<p>DEFRA Sustainable Development Indicators</p> <p>GRI, Environmental Performance Indicators</p> <p>IRIS Environmental Indicators</p>	<p>Department for the Environment, Food and Agriculture (DEFRA): Environmental Statistics Service.</p> <p>The Global Reporting Initiative (GRI) is a non-profit organization that promotes economic, environmental and social sustainability. GRI provides all companies and organizations with a comprehensive sustainability reporting framework that is widely used around the world.</p> <p>IRIS is a set of standardized metrics that can be used to describe an organization's social, environmental, and financial performance.</p>		
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