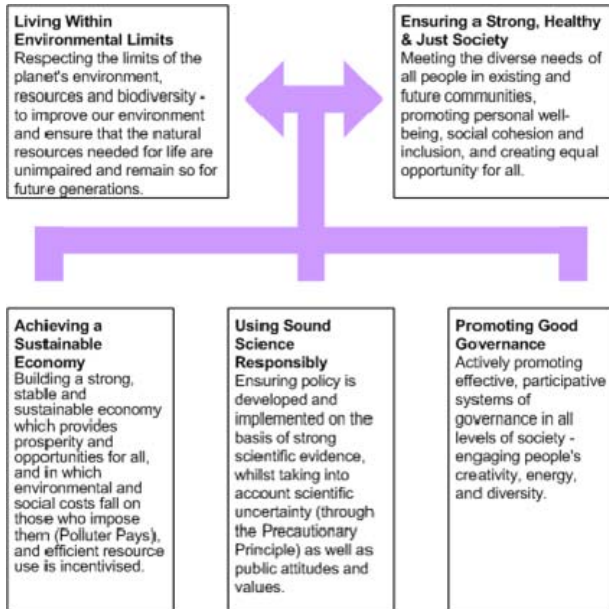


## Seeking Sustainability



Sustainability is the long term maintenance and enhancement of human well-being within finite planetary resources. It is usually considered to have environmental, economic, and social dimensions. This POSTnote summarises issues in defining and achieving sustainability.

### Background

The term sustainability is applied to a wide range of systems, approaches and practices, from accountancy to architecture. In a narrow technical sense, it is the capacity for continuance of a system, but a more usual interpretation would include the social understanding and acceptability of the system and its outcomes. While the need for it is rarely contested, the definition, scope and implementation of sustainability often are, including:

- what **sustainability** is and why interpretations differ
- how sustainability can be implemented through **sustainable development**
- the extent to which the “**green economy**” is informed by sustainability
- the most effective **indicators** for measuring progress towards achieving sustainability.

### Interpreting Sustainability

There is broad agreement that sustainability requires integrating environmental resilience with human well-being, incorporating a long term perspective. Human well-being, which will be the subject of a future POSTnote, is generally understood as a state of health, happiness and/or

### Overview

- The capacity of ecological systems to sustain human well-being at acceptable levels may be depleted irreversibly if the environment is sufficiently degraded.
- Sustainability requires prioritising and making choices to assign resources to enhance human well-being within agreed environmental boundaries.
- This involves the integration of environmental, social and economic factors into all policy decisions through sustainable development processes.
- There is a policy focus at the international level on the relationship between economic growth and the environment, but this could result in insufficient consideration of well-being issues.
- Indicators of sustainability do not yet have a sufficiently high political or economic profile to alter unsustainable trends.

prosperity, but there is no single accepted definition. The 2012 UN High-level Panel on Global Sustainability's “vision” is “to eradicate poverty, reduce inequality and make growth inclusive, and production and consumption more sustainable, while combating climate change and respecting a range of other boundaries”.<sup>1</sup>

A range of knowledge, methods and research is required to solve or mitigate the complex problems posed. Economics and science provide analytical frameworks for objective measurement of outcomes of policies. Social research provides evidence on the acceptability of processes of decision making and policy outcomes, such as:

- the social impacts now or in the future of altering property rights and regulating markets.
- whether inadequate governance processes could lead to the the breakdown of collective responsibility.<sup>2</sup>
- whether cultural constraints, such as practices and behaviours, may result in perverse outcomes.

The evidence base for refining policy measures requires both the objective measurement of outcomes and identifying how to achieve a degree of social fairness in the use of resources. Social research suggests that sustainability is

“normative”, like justice or freedom, leading to a range of subjective interpretations of sustainability (Box 1).<sup>3</sup> As the global population grows to almost 9 billion by 2040, and the number of middle income consumers increases by 3 billion, resource use pressures and rising commodity prices will intensify these debates.

## Sustainable Development

### A Systems Approach

The term sustainable development (SD) is often used interchangeably with sustainability. In 1987, the World Commission on Environment and Development defined SD as the “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. SD is the framework, process, or group of processes for integrating environmental, social and economic factors within all policy decisions, to develop the most sustainable policy option (Box 2). Impacts and interconnections are rigorously considered upfront to identify the consequences of a decision for current and future generations, and any mitigation measures required.

#### Box 1. Weak to Strong Sustainability

The inherent tensions within sustainability can be interpreted as needs versus resources or as short versus long term, which are reflected in a range of interpretations of sustainability from weak to strong.

##### Weak Sustainability

“Weak” sustainability assumes that economic growth in the present could be used to reverse the impacts of this growth in the future. While recognising the failure of markets to address the costs of natural resource degradation and depletion, the total level of economic growth is maintained indefinitely through substitution between the different types of resource (manufactured capital, human capital, social capital and natural capital, POSTnote 376). However, whether substitution is feasible requires quantification to determine if replacement with technology or human capital can maintain the functions currently provided by the resource. For example, a forest cannot be substituted for by investing the profits from deforestation in human capital through education, as this does not replace the natural processes supported by forests, such as hydrological cycle regulation.

##### Strong Sustainability

The 2011 UK National Ecosystem Assessment has set out the state of the UK natural environment and how it sustains well-being. “Strong” or “ecological” sustainability is based on scientific evidence that there are limits beyond which degradation or depletion of such natural resources may be irreversible in human time scales.<sup>4</sup> It requires a precautionary approach to avoiding irreversible degradation of key natural processes, such as biological productivity, to maintain the capacity of the natural environment to sustain human well-being at acceptable levels. Renewable resources, such as soils, should not be used or degraded faster than they are renewed, and pollutants, such as greenhouse gases, should not exceed certain levels. Any industrial activity involves resource use and the creation of some pollution along supply chains, so a degree of degradation is inevitable, but this should not be beyond environmental limits (POSTnote 370). Substitutability can also be applicable under strong sustainability, as depletion of non-renewable natural resources, such as fossil fuels, can be offset by investment in renewable resources or maximising resource efficiency through reuse and recycling.

The UK Sustainable Development Commission (SDC) described SD as “systems-based”,<sup>5</sup> in that it considers policies as part of an overall system rather than reacting to specific outcomes or events. A cyclical approach of policy planning delivery, reflection and learning allows for

continuous improvement,<sup>5</sup> although this implies sustainability can never be finally achieved.

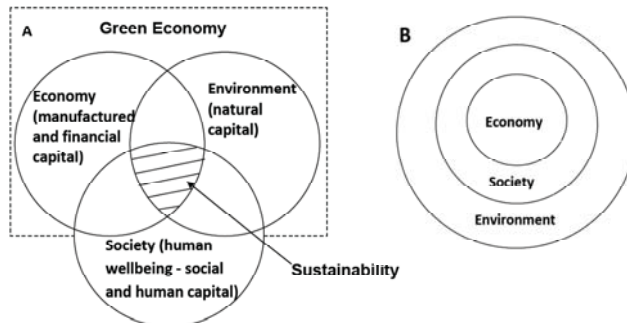
#### Box 2. Sustainability of London 2012

London 2012 has a commitment to being “the first sustainable Olympic and Paralympic Games”, with five key priority areas identified: climate change, waste, biodiversity, inclusion and healthy living. Independent research has provided evidence that the Olympic Delivery Authority (ODA) saved money, rather than adding costs, by applying the principles of SD to decision making in the build phase of the Olympic project. For example, the decision to remediate about a million tonnes of contaminated land by soil washing, rather than sending it to landfill, saved around £68 million. The ODA is sharing the lessons learned through the Learning Legacy Project,<sup>6</sup> and principles for success that are transferable to other infrastructure projects are being distilled. These include using an independent assurance body, the Commission for a Sustainable London 2012, to monitor the sustainability plans, objectives and progress of the organisations responsible for building and delivering the Games.

### Describing Sustainable Development

The abstract description of SD is important (Figure 1) as it determines how the principles are applied in decision making. The policy framework for SD evolved between 1972 and 2002 through a series of international conferences and initiatives. The 2002 World Summit on Sustainable Development extended the definition with the inclusion of three pillars of SD: economic, social and environmental (Figure 1A). Policy approaches based on weak sustainability (Box 1) trade-off between the pillars on a costs and benefits basis, with different types of capital treated as substitutable.

**Figure 1. Three Pillars (A) and Nested (B) Models of SD**



The nested model (Figure 1B) emphasises the dependence of society and the economy on the environment. The state of the environment is a precondition for determining social and economic conditions, but staying within the limits of all three elements is a precondition for achieving strong sustainability (Box 1). Boundaries or limits have been suggested for the environment and economies, although questions remain over the scale at which such boundaries should be set (global, national or local). Where social boundaries lie is also contested, but beyond a certain level of social inequality, such as high unemployment, social capital is inevitably eroded.

### Sustainable Development Strategies

#### EU Sustainable Development Strategy

In 2006, the EU adopted a sustainable development strategy (SDS). This focussed on changing consumption and production patterns and integrated policy-making through improved impact assessments and sustainable development principles. It aimed to create “sustainable

communities able to manage and use resources efficiently, able to tap the ecological and social innovation potential of the economy". Seven key priority challenges were identified:

- climate change and clean energy
- sustainable transport
- sustainable consumption & production
- conservation and management of natural resources
- public health
- social inclusion, demography and migration
- global poverty and sustainable development challenges

The 2009 review of the strategy noted that "despite considerable efforts to include action for sustainable development in major EU policy areas, unsustainable trends persist and the EU still needs to intensify its efforts". The Treaty of Lisbon re-states European SD as an objective, based on a high level of protection for the environment.

#### *UK Sustainable Development Strategy*

In the UK, a national SDS was introduced in 1994. It has been revised a number of times. The final report by the SDC, which the government stopped funding in 2010, recommended that a better vision of a sustainable future was needed for the UK.<sup>5</sup> The 2011 government SD vision accepts the principles set out in the 2005 SDS (Box 3), but defines the objective for SD as "stimulating economic growth and tackling the deficit, maximising well-being and protecting our environment, without negatively impacting on the ability of future generations to do the same".<sup>7</sup>

#### **Box 3. Securing the Future**

The 2005 SDS, "Securing the Future" set out five principles, as shown in the figure on the front page, with two primary principles - living within environmental limits and ensuring a strong, healthy and just society, supported by three underpinning principles.<sup>5</sup> The strategy defined sustainable development in the UK context as "a sustainable, innovative and productive economy that delivers high levels of employment and a just society that promotes social inclusion, sustainable communities and personal well-being. This will be done in ways that protect and enhance the physical and natural environment and use resources and energy as efficiently as possible." However, the 2009 Government Economic Service Review of Economics of Sustainable Development Report found that implementation of SD in UK policymaking was being impeded by:

- the lack of a commonly accepted definition of SD that is specific and/or measurable.
- the focus on how to make a policy option more sustainable rather than identifying the most sustainable policy in the first instance.
- the concept of SD embracing consideration of almost everything, with more focus on critical areas needed.

There is debate over the extent to which the definitions, principles or the processes of sustainable development should be set out in legislation.<sup>8, 5</sup> There is no general sustainable development duty which extends to government actors or activities in the UK and no obligation to produce a national sustainable strategy. The House of Commons Environmental Audit Committee (EAC) suggested more robust and permanent processes and tools are required to embed SD in government.<sup>9</sup> However, the government has stated that SD is an evolving concept, the principles of which cannot be set out for legislative or guidance purposes.<sup>10</sup> By contrast, the Welsh government has a statutory duty with regard to SD and is developing a Sustainable Development Bill (Box 4).

## **Transition to a "Green Economy"**

A decade of rising commodity prices suggests that more resource intensive economies may have lower growth in the longer term. Strategies for a "green economy" are intended to "decouple" resource use from economic growth. The OECD has highlighted that "the absence of coherent strategies to deal with these issues creates uncertainty, inhibits investment and innovation".<sup>11</sup> There is no accepted conceptual definition of a "green economy" (Figure 1A), but the broad areas it is intended to address are energy, food and water security, which include the transition to a low carbon economy. The UK government vision "Enabling the Transition to a Green Economy" sets out the timeline and measures for the UK economy to achieve this shift.

#### **Box 4. One Wales: One Planet<sup>12</sup>**

The SD scheme for Wales, One Wales: One Planet, is consistent with the five principles of the 2005 UK strategy, but is more specific in terms of targets set. The scheme requires SD to be the "central organising principle" for all policy decisions. The Welsh Government has statutory duties for annual reporting on progress, and to lay before the National Assembly a report on the effectiveness of the scheme after an election. Progress on SD is assessed by 44 indicators, grouped around 5 headline indicators: sustainable resource use; sustaining the environment; a sustainable economy, a sustainable society; and the "well-being of Wales". Wales also has a SD Charter which has been signed by the Welsh Government and 22 public, private and third sector organisations.

The Welsh Government also committed in its legislative programme to introduce a Bill on SD to the National Assembly in 2013 or 2014 to:

- make sustainable development the centre of all activities and decisions of the Welsh Government and devolved public bodies in Wales.
- create an independent sustainable development body for Wales. The contents of bill will be subject to consultation during 2012,<sup>13</sup> but the intention is to impose a duty that will ensure the key sustainability aspects of a policy decision are identified and the most sustainable policy options adopted. Suggested possible duties include:
  - to assess the compatibility of decisions against SD principles.
  - to demonstrate how internal systems of decision making ensure that SD as the central organising principle fully determines decisions.
  - to weigh the short term benefits of options against the long term social, economic and environmental costs, coupled with a duty to avoid or justify any long term costs.

The nature of decisions subject to this duty and the strategic level at which they should be applied is also part of the consultation, as is whether SD should be defined in the Bill.

The EU has published "Rio+20: towards the green economy and better governance" and a "Roadmap to a Resource Efficient Europe". This latter strategy entails more than efficient use of raw materials and pollution reduction - it also requires protection of natural capital assets, such as land, water and biodiversity. Stocks of all environmental assets from which an economy benefits or sources its global supplies will need to be secured. Furthermore, ecosystems will need to be restored, residual waste reduced close to zero and systemic risks to the economy from the environment characterised and avoided. The lead indicator for measuring resource productivity will be the ratio of GDP to Domestic Material Consumption, with a range of indicators on water, land, materials, carbon and other environmental impacts to take account of other aspects of consumption.

The Green Fiscal Commission, an independent think tank, has suggested how taxes on, or permits for, emissions and resource use can be used to reduce taxes on employment and income and finance the shift to a resource efficient economy.<sup>14</sup> Policies aimed at pricing environmental resources correctly (POSTnote 378), including water, clean air, ecosystems and marine resources, may raise costs in the near term, but could increase efficiency and innovation in resource use. Other commentators contend that economic growth cannot be decoupled from consumption of natural resources and increasing energy use, and that the only means of achieving sustainability is through maintaining zero growth or the contraction of economies.<sup>15</sup>

### The Green Economy and Well-being

The green economy is seen as a means of achieving sustainable development, but green economic strategies are primarily about economies and the environment (Figure 1A). Some critics, such as the Green Economy Coalition, contend that current approaches fail to integrate into policies the essential dependence of human well-being on the natural environment. The OECD, EU and UK government believe that their green economic approaches are consistent with social goals, as well as environmental ones, as society's wellbeing is in part derived from the present and future state of the environment. The EAC has recommended that the government should ensure that the green economy principles agreed at Rio + 20 represent a fair green economy. They should fully reflect the social dimension of sustainable development and provide help to countries and groups of people disadvantaged by the transition.<sup>16</sup>

### SD Indicators

Measuring progress towards sustainability is both an integral part of SD and 'by default' another means of defining it, as factors that are measured are more of a priority in policies. A dashboard of SD indicators, as the UK has (Box 5), allows comparison of whether there has been improvement, deterioration or no change from previous years due to policies. There is a debate as to how SD indicators can be given a political profile equivalent to GDP. An aggregate measure of sustainability might gain a higher profile and the Defra Secretary of State has recently suggested progress is needed towards "GDP +" (often referred to as "beyond GDP"), which includes measures of the value of natural resources and well-being.

The recent EU funded project "Integration of Mainstream Economic Indicators with Sustainable Development Objectives" has considered measurement systems that could provide an assessment of progress toward the simultaneous aims of economic success and long-term sustainability.<sup>17</sup> However, aggregate measures of sustainability are difficult because the indicators measure widely differing factors. Another method for assessing the sustainability of national economies is the "sustainability gap" (POSTnote 376), a measure of the deficit between the investment in the level of natural capital required by an economy and that actually achieved.<sup>18</sup>

### Rio +20

The green economy is one of two themes of the Rio +20 United Nations Conference on Sustainable Development in

2012, along with the international institutional framework for SD. One of the intended outcomes of the conference are new global Sustainable Development Goals covering areas such as sustainable energy, but there will be no binding commitments to any targets. The goals are intended to complement the revision of the 10 Millennium Development Goals post-2015. Discussion of issues such as food security in the Rio +20 negotiations are indicative that environmental boundaries are being encroached and adaptation policy measures are required beyond SD policy approaches.

#### Box 5. EU and UK Sustainable Development Indicators

##### EU Sustainable Development Indicators

The EU Sustainable Development Indicators are published on a biennial basis by Eurostat.<sup>19</sup> They are based around the ten themes of the EU SDS: socioeconomic development; climate change and energy; sustainable transport; sustainable consumption and production, natural resources, public health, social inclusion; demographic changes; global partnership and good governance. There are 11 headline indicators attached to these themes (but no headline indicator for good governance), with two levels of supporting indicators under the headline indicators. There are more than 100 indicators including both quantitative and qualitative measures. There was no change in 7 of the headline indicators in the 2011 report compared with 2009, with negative trends in GDP per capita and employment of older workers and favourable trends in greenhouse gas emissions and assistance to developing countries.

##### UK Sustainable Development Indicators

The UK SD indicators cover four themes: sustainable consumption and production; climate change and energy; protecting natural resources and enhancing the environment; and, creating sustainable communities. Before 2005, there were 140 indicators, but this was reduced to 68. There will be a formal consultation on proposed changes to these indicators in July 2012, which may include another reduction in their number. The indicators will also need to be aligned with the work being done by the Office for National Statistics on the proposed "well-being" indicator. The UK government has also committed to measuring natural capital in national environmental accounts (POSTnote 376).

#### Endnotes

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- 8 House of Commons Communities and Local Government Select Committee, *The National Planning Policy Framework*, 8<sup>th</sup> Report of Session 2010-12
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- 13 <http://wales.gov.uk/docs/desh/publications/111201susdevsdiscussionen.pdf>
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