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Williams, Evan and McRory, Eric and Richards, Caspian and Mathieson, Scot (2007) *What the council of economic advisors need to know about sustainable development*. Quarterly Economic Commentary, 31 (4). pp. 49-53. ISSN 0306-7866

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# What the Council of Economic Advisors need to know about sustainable development

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## Introduction

The decision by Alex Salmond to appoint a Council of Economic Advisors to move economic decision making away from purely political rationale is particularly welcome given the new administration's commitment to sustainable economic growth as *the* overarching priority. From the first Minister's statement to parliament<sup>4</sup> is clear that as an economist he recognises that sustainable economic growth is not (just) economic growth that continues but economic growth that is environmentally and socially sustainable. In the Scottish Environment Protection Agency we have wrestled with just what sustainable economic growth might mean and here we offer some of our own thoughts to help the new council of economic advisors in their work.

## Background

It may be a little trite but it is important to appreciate that our very existence on the planet is dependant to a large extent upon the life support systems provided by the environment (we might reasonably think of these systems as representing the natural capital of the planet). We are as a species utterly dependant upon the free air, clean water, waste recycling and biological production that ecosystems provide. System wide such benefits are in practice irreplaceable while at the national policy scale it is all too easy to make the mistake of thinking of that natural capital as being substitutable or "trade-offable" for economic growth (or indeed man made capital). The more one does so the greater threat to the overall integrity of the system.

Scotland has a comparative advantage over many other countries because of the natural environmental endowment we have. Our environment is generally of a higher quality than that of many other parts of Europe and therefore the promotion of genuine environmental sustainability will be to our advantage! Sustainable economic growth is not only achievable but in the authors view is an important component in Scotland's long term well being.

## Definitions

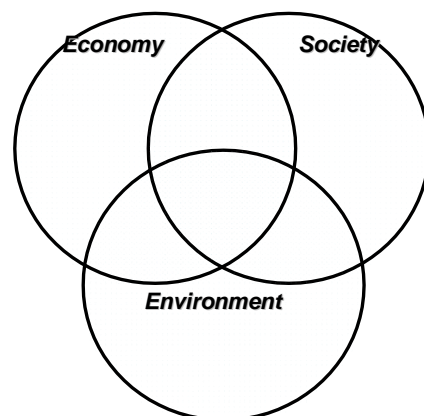
Firstly it is important for the Council of Economic Advisors to consider what we mean when we talk of sustainable development? In the UK, sustainable development has been a feature of government policy for some twenty years.<sup>5</sup>

The relationship between environment, society and economy has traditionally been represented by three overlapping sets of interests, represented as circles (Fig. 1). In this model, sustainable development is said to be taking place where all three sets of interests overlap, in the centre of the model. This model encourages the idea that trade-offs between the three sectors are possible, indeed necessary to achieve sustainable development. This model may not optimise environmental protection standards if economic gains outweigh any environmental benefits (in the judgement of society or its decision-makers). The relationship between environmental protection and economic gain changes however, if we consider a different model of sustainable development. Originally presented by the European Environment Agency<sup>6</sup>, an alternative model to the overlapping model is offered here (Fig. 2), where society and economy exist as a subset of the environment. For an activity to constitute sustainable development under this model, economic, social and environmental benefits will all be generated. Social and economic activity does not exist outside of the environment.

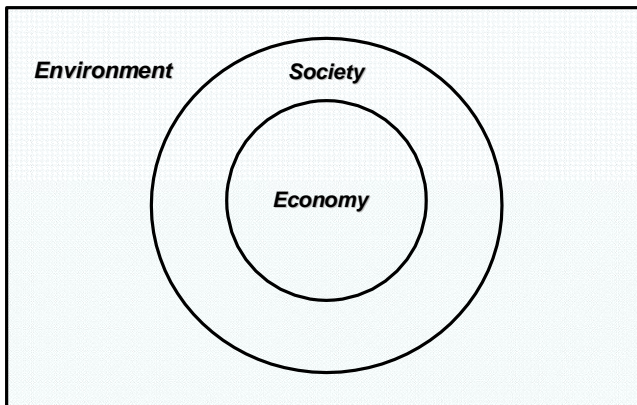
An important consideration in determining the place of economic growth within a sustainable development framework is the extent to which the view of what constitutes sustainable development is regarded as a fixed point. Our view is that both our aspirations and our level of understanding change over time such that sustainable development is almost definitionally a moving target. What we think of today as sustainable economic growth may not be good enough in the future.

Recognising these inter-dependencies and the evolution of the concept is fundamental to managing a sustainable competitive economy.

Figure 1: Intersecting circles



**Figure 2: Overlapping circles**



What is sustainability? There are also a number of definitions of sustainability. The most widely quoted is that of the Brundtland Report first published in 1987 which defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Now almost a generation later we are hardly any nearer to delivering on Brundtland’s commendable aspirations.

The definition is deceptively simple but the reality is that we are still very dependent on the consumption of scarce non renewable resources to sustain our current rate of economic growth and are some way from a policy regime that takes us away from this path.

To paraphrase Burke<sup>7</sup> ‘the only thing necessary for an environmental catastrophe is for environmentally conscious people to do nothing’. If the consequences of our actions go un-noticed for generations, how do we know that they will be truly sustainable?

To be regarded as contributing to sustainable development, it is our view that sustainable economic policy needs to have a broader scope than just the immediate environmental issues associated with industrial processes and growth. In particular it would need to consider valuation, economic efficiency, substitutability, resilience, and environmental justice taking into account a longer time horizon to build in inter-generational equity issues as a minimum requirement.

Integration of these central issues into policy requires significant changes to current thinking. Although thought in these separate areas is well developed, their relationship to environmental protection and implications of their integration is less well understood. The opportunity for developing strategies based on these themes of sustainable development is discussed in the remainder of this paper.

## Valuation

The CEA will realise that measuring and valuing the environment is extremely problematic. The two main reasons for this are: 1) The environment is experienced as an open access, free good, (no one pays directly for the environment which has no monetary ‘price’ but everyone bears the cost of its deterioration) and 2) there are considerable difficulties with data sources both in measuring and attribution.

A common assumption is that environmental degradation is a form of market failure. This is misleading as the markets were never designed to take account of the environment. Society’s realisation that its very survival depends on appropriate stewardship of the environment is a relatively recent development and as such is a new problem that the market does not cope with. It would be a mistake to treat environmental problems as simply a case of finding the right values to correct the market failure.

Another assumption is that market instruments are always better than administrative and legal controls and provide more efficient tools. However, if the root problem is not market failure a market solution may not be appropriate at all. On the other hand it is possible that regulatory approaches may result in costs of monitoring and enforcement that exceed the benefits achieved. This points to a need for pragmatic approaches.

Where the capacity of environmental systems to absorb and assimilate wastes (the carrying capacity of the environment) is exceeded the environment becomes degraded. Society has not proved to be a good judge of what the optimal level of pollution might be. In general people do not value the environment appropriately and are not well enough informed to make such decisions. Taking climate change as an example: most nations now recognise that it is a major issue but nevertheless most adopt a short term view of both the need to act and the need for co-operative international action

The Stern Review<sup>8</sup> has provided indicative costings and usefully highlighted the fact that the longer we delay the greater the necessary costs we will bear. Some of this inaction results from a fear of “free riders” who benefit from the actions of others without taking action themselves but much of it must stem from a misapprehension about the nature of the costs of environmental action.

The effective implementation of environmental protection can improve profitability in many areas, not just in energy efficiency.

In spite of the misgivings we expressed earlier about the merits and capacities we have to accurately value the environment we undertook just such an exercise to explore the flow of benefits Scotland gains from the environment. Williams et al 2003<sup>9</sup> estimates the annual flow of benefits of

Scotland's environment at over £17billion; that is equivalent to more than 20% of Scottish Gross Domestic Product.

Gross Domestic Product (GDP) in monetary terms is the main measure we have of economic growth. As most economists will appreciate GDP takes no account of welfare, the social benefits of environmental protection or of the relationships between wealth and happiness. The CEA would do well to reflect on the limitations of GDP as a measure of the change in welfare of Scotland's people and we would encourage other measures to be used to ensure that a well rounded appreciation of progress can be achieved.

One approach that we like, and have found to be among the most useful indicators developed in recent years is that of 'genuine savings'. This approach fits in with current national accounting principles and is the concept that the net saving rate in a national accounting framework should take account of resource depletion and environmental degradation, it extends to include technological change, human resources, exhaustible resource exports, resource discoveries and critical natural capital. The components of a course of action are all considered and in all cases, a negative rate of genuine saving shows that course to be non-sustainable. Questions of measurement away from the optimum, of sustainability, depreciation of produced assets, exogenous versus endogenous technological growth and global preferences for natural assets can all be incorporated and clarified. It is a versatile tool and could be used to good effect in Scotland.

Genuine savings does provide a robust indication of the sustainability of an economy and is a powerful tool to inform policy makers. However one criticism, that it does break down when there is insufficient substitutability between natural resources and produced assets, is shown to be moot in Hamilton et al.<sup>10</sup> At present finite resources are necessary for production and many current substitutes are not sustainable. A current example might be the use of bio-ethanol as a replacement for fossil fuel (diesel). The preference for bio-ethanol is in some instances resulting in the accelerated destruction of biodiversity rich tropical rain forest to be replaced with monoculture palms grown for their oil. This may well lead to a rise in prices of other crops as farmers switch production.

### **Social benefits of environmental protection**

Our health and well-being are inextricably linked to our environment – be it the quality of the air we breathe, proximity to noise and odours from industrial plants, or the availability of green spaces in which to exercise.<sup>11</sup> Positive and negative effects of the environment on human health translate into positive and negative impacts on the economy: for example, a Defra review of the Air Quality Strategy for England, Scotland, Wales and Northern Ireland concluded that new policies to reduce air pollution implemented as a result of the strategy had generated more than £68,000m of benefits to the UK at an estimated cost of

only £6,000m.<sup>12</sup> Such analyses of benefits are based on premature deaths (quantified in monetary terms as lost productivity) and the costs to the taxpayer of hospital treatment associated with illnesses caused or exacerbated by air pollution. The range of social impacts and benefits which cannot be monetised, however, is far wider, and includes the positive and negative impacts of the physical environment on stress levels and mental health; on opportunities for taking physical exercise in one's local area, etc.

A number of studies have demonstrated that the social impacts of environmental quality are unevenly distributed amongst different population groups. Scotland's Sustainable Development Strategy recognises that its most deprived communities are most vulnerable to the pressures of poor environments, and most in need of access to the benefits of good quality environments.<sup>13</sup> A recent report for the Scotland and Northern Ireland Forum for Environmental Research (SNIFFER) found links between social deprivation and particular aspects of environmental quality such as air quality, river water quality and proximity to derelict land and large industrial sites. For example, people living in the most deprived areas are significantly more likely to experience the poorest air quality than those living in less deprived areas.<sup>14</sup> Similarly, litter, fly tipping and graffiti also tend to be more prevalent in socially deprived areas. While their impact is often dismissed as minor, links have been demonstrated between exposure to such 'street level incivilities' and the incidence of depression and anxiety, as well as self-reported general levels of health.<sup>15</sup>

Economic policy does not tend to consider, in a meaningful way, issues of social concern, although the relationship between poor social conditions and poor environmental quality is well documented.

Environmental protection and improvement can realise substantial social benefits, by ensuring that the physical and psychological benefits of a healthy environment are available to all, and that all are protected from the impacts of the various forms of pollution. These social benefits in turn ensure the healthy workforce necessary to underpin sustainable growth, and alleviate some of the social inequalities which can prevent economic growth from delivering benefits to all sectors of society.

### **Time**

The CEA will be thinking about the long term future of Scotland and as such will need to consider the implications of how time is treated when considering the full effect of economic decisions. This is particularly pertinent in terms of decisions with environmental consequences.

In theory at least society favours present consumption over future consumption. There are two main reasons for this: firstly because of pure time preference and secondly because of expected growth in future income and the expectation of diminishing marginal utility. Sustainable

development can only truly be tested in the long term or when a tipping point has been passed and it fails (such as the collapse of the cod fisheries in the Grand Banks).

Discounting is often used to accommodate time in economic valuing but this has certain features that can be unhelpful when addressing environmental concerns. As environmental damage is likely to occur in the long term it is reduced to insignificance by discounting. Cost Benefit Analysis may not highlight the true nature of the consequences of present actions as they occur well into the future and are difficult to measure.

The corollary of this is that environmental benefits will be understated (too heavily discounted) for the same reasons and not be properly considered. For these reasons it is argued by some that environmental projects are discriminated against by discounting.

A high discount rate implies a rapid consumption of renewable natural resources such as fisheries, forests and game. In an extreme case it would be rational to 'harvest' a resource to extinction if the discount rate were to exceed the resource's natural regeneration rate because the benefits of its consumption now would be seen to outweigh the benefits of consuming more in the future.

Our advice to the CEA would be to treat with caution any long term discounting of environmental or social assets in the same way as man made assets. It is reasonable to assume that man made assets may be more or less substitutable for one another but such an assumption does not necessarily hold for social or environmental assets.

### **Increased competitiveness through environmental protection**

CEA members may well be familiar with the body of work that supports effective environmental regulation leading to improved competitiveness. This hypothesis flies in the face of popular belief that environmental regulation can only be a burden on business. As is often the case popular belief is not always fully informed. A good discussion of both sides of this debate is presented in Williams et al (2002).<sup>16</sup> That paper highlights the difficulties in categorically stating one position or the other but it does show that in terms of sustainable environmental development the jury has reached a consensus if not a final verdict. Nonetheless expenditure on environmental protection is considerable, exceeding £3.4bn in the UK<sup>17</sup> and a conclusion to this debate is now a matter of good governance and not merely one of academic interest!

The work of Esty and Porter (2001)<sup>18</sup> also contributes to the growing body of research that suggests that environmental regulation and competitiveness are not just compatible but mutually reinforcing. This work has been updated for Scotland by Le Roux et al<sup>19</sup> and shows that Scotland has a high quality environmental regulatory process that imposes relatively low compliance costs on industry compared with

costs in OECD countries in an environment that is of generally high quality. The relatively low costs that are incurred can be seen to provide good value in protecting an important social and economic asset.

### **Opportunities for new more sustainable models of regulation**

The CEA will wish to examine the most modern forms of new environmental regulation, such as the EU Water Framework Directive<sup>20</sup>, and the Integrated Pollution Prevention and Control Directive<sup>21</sup>, and learn from them. Modern environmental regulation is being increasingly designed to make decisions according to sustainable development principles. The Water Framework Directive sets an aspiration of achieving good ecological status of all water bodies, and the means of achieving this is left to Member States. In doing so, the Member States' competent authorities must produce river basin management plans in which they set out the conditions in local water bodies and the means by which the desired good status can be achieved. This plan will be subject to widespread negotiation and consultation with stakeholders and the process of improving water quality will be very much a collaborative effort targeted at the actions, which can deliver the greatest benefit to the communities and their water resources. The approaches designed by SEPA<sup>22</sup> have made Scotland an international example of good practice by their design and implementation.

Sustainable development gives an international dimension and as failure could be irreversible it charges the normal debate about policy choices.

### **Summary and Conclusions**

The creation of a Council of Economic Advisors for Scotland is a huge opportunity to put longer term economic decisions into perspective and not to merely be driven by a short term political imperatives. The incumbent skills of such a group will enable the new administration to (take steps to) overcome limitations in current knowledge and adopt a pragmatic forward thinking approach into the future. This will result in greater transparency in decision making and lead to more effective, indeed sustainable, governance.

The practical problems of measuring sustainability are clear and we exhort the CEA to develop a set of indicators of progress against which to hold this and successive administrations to account. A key element of their work is an approach to sustainability that enables individuals to properly value the environment (albeit not necessarily in monetary terms) and see its stewardship as contributing to wellbeing. Building a strong sustainable economy is about taking the strengths that we have as a nation and using them constructively to create the future we want for the generations to come. We are convinced that concepts of sustainable development can help us to achieve that and we look forward to helping the CEA in their work for all of the people of Scotland.

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## References

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