

Editorial

Special Edition: Environment in Sustainable Development

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When we were invited by the editors of *Sustainability* to put together a special edition on “Environment in Sustainable Development” our first reaction was to question whether this was really needed. After all, the environment has long been regarded as a central plank in sustainability and there are countless articles and books published on an annual basis that explore the impact of our economic and social activities on our environment. Just what is it that a special edition can achieve? What new angles could we hope to provide? Our initial thinking was to link the special edition to a particular, almost unique, location in time rather than space. We are in the process of recovering, albeit stuttering, from the deepest economic crash experienced by the European and North American economies. The crash has brought some national economies to their knees and, if economic commentators are to be believed, almost destroyed the Euro. Recovery from that crash has been slow and it is arguable whether at the time of writing this has developed much momentum. There is still the skewed perception that prosperity equals economic growth and that economic growth can take place without real (sustainable) development or by simply implementing austerity measures and surely without people’s participation. An analogy from National Parks worldwide is when conservation agencies try to enforce protection without local people’s support. All such attempts have either failed or resurrected only once people’s involvement was secured and guaranteed. The unidirectional austerity measures imposed mainly in the countries of southern Europe have destroyed social cohesion leaving deeply wounded societies, while at the same time have also put up for grabs important assets (including natural capital) in each of these countries and therefore in jeopardy even their long term recovery.

It is probably fair to say that the economic crash has focused the minds of politicians, media and the public on the more economic and social pillars of livelihood. Economists are probably closer to politicians than natural scientists, but how has the environment fared in this enhanced emphasis on the other pillars of sustainability? This, of course, brings us back yet again to the Holy Grail in sustainable development; the potential for decoupling environment impact from economic growth. Hence, in an ideal world an emphasis on promoting economic growth should not have any detrimental impact on the environment; but that is in an ideal world. Others have argued that the best way to square that circle is to avoid economic growth while maintaining or indeed growing prosperity [1], but is that a pragmatic vision [2]? None of this debate is especially new, of course, and in our notes for the special edition we pointed out, as an example, the sentiments of Richard Price, the Chief Economist and Director of Corporate Performance in the Department for Environment and Rural Affairs (DEFRA) in the UK [3]. We chose that country in particular because of its very high debt levels compared to its peers, a situation compounded by the dominance of financial services in its national economy. After all, it was the international banking sector that was hardest hit in the great crash of 2007/2008. The DEFRA report was published in 2010 and in it Price repeats a point made more times in the history of sustainability than any of us could possibly count; "*economic and environmental performance must go hand in hand*". It is not the statement that is so surprising but the fact that Price felt it needed to be repeated, and it was this that spurred out thinking for the special edition. In a way, this statement also underpins current attempts globally at (e-)valuing Ecosystem Services. The first valuation of ecosystem services and natural capital at a global scale was carried out in the 1990s giving them a value of approximately US\$33 trillion per annum, nearly twice the global GDP [4]. Subsequent to this valuation, a wide range of studies attempted to value ecosystem services in different geographical and ecological contexts both for the present [5,6] and future trends [7,8]. This work culminated in 2005 with the publication of the Millennium Ecosystem Assessment (MEA), which for the first time gave a global overview of ecosystems and their health; the major anthropogenic drivers of ecosystem change; and scenarios and strategies for the future [9]. Later on The Economics of Ecosystems and Biodiversity [10], a global initiative, focused on drawing attention to the economic benefits of biodiversity. Despite these developments, we do feel that the application of the concept of ecosystem services and natural capital at the national level is very much in its early days and no consensus has been reached on how ecosystem goods and services are valued [11]. There has also been slow progress in identifying, mapping and quantifying these services [12] let alone valuing them economically and convincing politicians about their monetary value.

The special edition attracted a total of nine papers from eminent workers in the field. Of these a number of papers addressed the issue of decoupling head-on. Zhang *et al.* [13] used a novel set of indicators (including emergy) to explore decoupling in Shenyang city, China, between 1995 and 2010 provide some sense of optimism with some indicators suggesting a decrease in pressure on the environment with economic growth. Kyle Knight and Juliet Schor [14] in their paper using carbon emissions as a key indicator of pressure on the environment also point to some evidence for a decoupling between economic growth and territorial emissions of carbon dioxide. However, the story is not a clear cut one, and Knight and Schor did not find any evidence for decoupling using consumption-based (carbon footprint) emissions. Neither should we fall into the trap of always assuming that the relationship between economic growth and the environment is a one-way street; that economic growth is a potential driver for

environmental damage. Dongyong Zhang and her colleagues [15] remind us that air pollution can be a serious detriment to public health and that in turn can cause economic loss. Hence, decoupling can bring economic benefit. The final paper in the “decoupling” group of the edition is provided by Louis Cassar and Liz Conrad for a small island state-Malta [16]. Like the others in this group they identify some evidence for optimism in terms of decoupling economic growth and several impact indicators. However, their paper reminds us that much depends upon choice of indicator. Indeed there is a need for good quality data collected on a routine basis, especially with regard to environmental impact, to populate indicators and indices. James Lein’s paper [17] discusses a number of land use intensity indices derived from earth-observation satellite data, and clearly this technology has much to commend it.

While decoupling is typically expressed in terms of economic growth and environmental impact (or resource consumption) it is important to remember that there is more to life than money. In our paper (Morse and Vogiatzakis [18]) we show how consumption (ecological footprint) is very much associated with social deprivation in England; greater deprivation leads to less impact on the environment. But one can hardly argue for a developed society to move towards greater deprivation in order to minimise consumption of the Earth’s resources.

The final papers in the special edition approach decoupling from other angles. Shahidullah and Haque [19] explore the impacts that microenterprises in Bangladesh can have on sustainability. They conclude that “*In addition to generating profit and supporting livelihoods, the studied enterprises demonstrated numerous environmental benefits including carbon sequestration, health preservation, damage control, and conservation of natural resources.*” Microenterprises in one of the poorest countries on Earth can indeed be green, profitable and socially responsible. In their paper Nadia Sitas *et al.* [20] explored the gap between ecosystem service research and management in development planning in South Africa. They call for a transdisciplinary approach that encompasses a variety of stakeholders to help mainstream ecosystem service ideas into management. Finally, Zheng Yuan and colleagues [21] explore the state-of-play of what they call Traditional Ecological Knowledge (TEK) in rice growing areas of Yunnan Province, China; the third paper in the special edition that has a focus on that country. The role of traditional environmental management systems based upon centuries of experience is often overlooked. Indeed decoupling is often seen as a need that arose in more recent times as industrialisation took hold and allowed an intensification of consumerism. Yuan *et al.* find that TEK is in decline in the villages they looked at, but is this necessarily a problem? The authors acknowledge that the impacts of the decline on rice systems are unknown, and indeed what may well happen is emergence of what the authors call a “*blended TEK, with old and new knowledge and practices*”.

In conclusion the main findings of the papers in the special edition suggest that progress is being made in decoupling economic growth from environmental impact, but we still have a long way to go.

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