

## Foreword to 'Cents and Sustainability', by Dr Kenneth G. Ruffing



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The leitmotif of this book is how to decouple environmental pressures from economic growth while simultaneously making progress towards attaining the millennium development goals. It thus addresses a number of economic, social, and environmental dimensions of sustainable development.

Ultimately, environmental pressures can be reduced only by reducing the level of output (negative economic growth) or by transforming the economic processes that underpin growth in such a way as to reduce the pressures (emissions of pollutants, greenhouse gases, and destructive use of natural resources) per unit of output. Since buoyant economic growth is a necessary, but by no means sufficient condition, for achieving most of the MDGs, the former is not an option. That leaves us with decoupling. Because environmental pressures are multiple, there is no single overarching solution - no magic bullet. There is, instead, a need for a 'decoupling agenda'. In fact, governments with well established environmental programs are all pursuing such agendas without necessarily labelling them as such.

The literature on environmental indicators distinguishes between 'relative' and 'absolute' decoupling. In the former situation, the environmental pressures continue to increase, but at a slower rate than the relevant driving variable (usually GDP). In the latter situation the environmental pressures actually fall in absolute terms, while the relevant driver continues to grow.

The book restates the case for reducing environmental pressures. Failure to do so will entail very high costs to ourselves and future generations, and the technological means and the policy tools needed already exist and, in most cases, have been deployed in one country or another. Finally, the costs of implementing a decoupling agenda are eminently affordable, amounting to only a few percentage points of future increases in GDP. These costs have been extensively assessed by the OECD and others.

### Goals of Environmental Policy

The policy challenge is to achieve absolute decoupling in a cost-effective way to the point that the requirements of environmental sustainability are met. These can be summarised by four criteria: 1) regeneration, 2) substitutability, 3) assimilation, and 4) avoiding irreversibility. A few words describing each are provided below using language that was agreed by OECD Environmental Ministers in May 2001.

Regeneration means that renewable resources shall be used efficiently and their use shall not be permitted to exceed their long-term rates of natural regeneration. Substitutability means that non-renewable resources shall be used efficiently and their use limited to levels which can be offset by substitution by renewable resources or other forms of capital. Assimilation means that releases of hazardous or polluting substances to the environment shall not exceed its assimilative capacity; concentrations shall be kept below established critical levels necessary for the protection of human health and the environment. When assimilative capacity is effectively zero (e.g. for hazardous substances that are persistent and/or bio-accumulative), effectively a zero release of such substances is required to avoid their accumulation in the environment. Avoiding irreversibility means that irreversible adverse effects of human activities on ecosystems and on biogeochemical and hydrological cycles shall be avoided; the natural processes capable of maintaining or restoring the integrity of ecosystems should be safeguarded from adverse impacts of human activities; and the differing levels of resilience and carrying capacity of ecosystems must be considered in order to conserve their populations of threatened, endangered and critical species.

In its recent report on the OECD Environmental Outlook to 2030, the costs of policy inaction were found to be particularly high for water pollution, especially in developing countries; for air pollution the costs were as much as a few percentages of GDP in the US, the EU and China, and for climate change, the costs of inaction were in the range of 1 to 10 per cent of global output.

### The Roles of the Main Actors

Governments, business, and households can all contribute to the common task of decoupling. The voluntary actions of business and households can directly reduce the intensity of some environmental pressures; they can also reveal the relatively low costs entailed by many measures which reduce environmental pressures; and they can help raise environmental consciousness which can lead to heightened expectations (and demand) for government action.

Business can benefit from voluntary action to reduce environmental pressure, especially when the measures reduce costs (eco-efficiency), or help the firm to secure a competitive edge in certain markets. Households can also benefit directly by reducing costs (for example, water and energy) through more efficient behavior.

However, voluntary actions are no substitute for action by governments, especially since the costs of pollution are often borne only to a small degree by the polluters themselves, but mostly by others. Government policy measures are thus required to 'internalise' these costs, and thus make the 'polluter pay', a principle politically binding on OECD member countries. With regard to natural resource use, the problem is often that of open access to common resources such as fisheries. Without restrictions on access to ensure that resource use is kept within the limits of sustainable use, resources will be over used. This is because it is not in the interest of any single producer to reduce effort since this will only serve to increase the profits of other producers if they do not follow suit. Once access is controlled by a suitable regulatory framework, charges can be levied equal to the value of the resource rents. Application of this second OECD principle, that of 'user pays', is a necessary but not always sufficient condition for ensuring sustainable use of natural resources.

### Environmental Policy Measures

Government has an array of measures at its disposal for implementing environmental policy, including: direct regulation of the command and control variety; economic instruments such as environmental taxes and tradable emission permits; and information tools, such as pollutant release and transfer registries (PRTRs) and environmental labeling. These instruments can be used singly, or in combination, and the judicious selection of a suitable policy instrument (or mix) can substantially reduce the cost of achieving environmental goals.

Information for decision making is crucial for making sound policy and for monitoring progress. Indicators to measure decoupling have been developed and are regularly published by the OECD as part of its key indicators, as well as by the EC, and many national governments. These are based on a small subset of environmental data that are now regularly collected by the EC and by other OECD countries. The more extensive PRTR systems often track dozens of particular pollutants known to have negative impacts on human health and the environment. These inventories are also increasingly being made available on-line. An OECD co-ordinated program to assess the potential impacts of chemicals produced in high volumes also generates information useful to governments and the general public in deciding on the stringency of environmental regulations.

### Estimates of the Cost of More Ambitious Environmental Policies

Efficient environmental policies are important since direct expenditures for pollution prevention and control in OECD countries already range from 0.5 to 2.1 per cent of GDP. It is important to recognise that increasing environmental expenditure in itself does not reduce GDP; instead it redirects economic activity toward the purchases of goods and services required for environmental management. The size of the environmental goods and services industry was estimated at more than US\$650 billion worldwide in 2005, about 1 per cent of world GDP. Jobs are created in the waste management industry in the supply of engineering goods (pipes, pumps, filters, etc.) for waste water management, consultancy services for undertaking environmental impact assessments, and specialised energy products, such as wind turbines, solar panels, etc.

However, there is an indirect effect on GDP. It has been estimated, for example, that the additional costs of implementing measures to reduce a number of environmental pressures could lower GDP in OECD countries by about 1.2 per cent in 2030, and more ambitious measures to reduce CO<sub>2</sub> to a safe level by 2050 could cost even more, slowing the rate of GDP growth by about 0.1 per cent per year over 25 years. This indirect impact on GDP arises from increasing the capital and/or operating costs of production in areas affected by regulation as calculated by mathematical economic models that assume full employment and an economy-wide savings rate that does not change in response to the increase in capital-output ratios which some types of environmental policies would impose on business.

So securing environmental stability does come at a cost. The displacement effect mentioned above means lower final consumption of goods and services purchased by households as some labour and capital are transferred to the sectors producing environmental goods and services; and slightly lower productivity (by raising the cost of production) which would mean slightly lower GDP in the future than would otherwise be the case. However, the environmental benefits that would accrue to ourselves and future generations are widely estimated to exceed these costs when both are properly calculated.