



Sustainable development: Critical issues

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Introduction

How can we meet today's needs without diminishing the capacity of future generations to meet their own? This is the challenge of "sustainable development". OECD countries committed themselves to achieving sustainable development at the 1992 UN Conference on Environment and Development. Yet, as world leaders prepare themselves for the upcoming World Summit on Sustainable Development – to be held in Johannesburg, South Africa, in September 2002 – progress accomplished in protecting the global environment and reducing poverty world-wide falls short of what is needed.

This *Policy Brief* presents some of the key messages from the recent OECD report "*Sustainable Development: Critical Issues*", prepared in response to OECD Ministers' 1998 mandate. Building on the analysis in this report, a companion volume – "Policies to Enhance Sustainable Development" – identified some of the conceptual and practical barriers standing in the way of progress. It also formulated a set of concrete policy recommendations for making markets work for sustainable development, for strengthening decision-making, for harnessing science and technology, and for managing linkages to the global economy.

OECD Ministers of economics, finance and environment endorsed these key recommendations at their joint meeting in Paris on 16 and 17 May 2001. Further, they asked the OECD to intensify its work on indicators to be used in future peer reviews, on overcoming obstacles to reforms, on the social dimension of sustainable development, and on ways to improve policy integration and coherence. As a result of this new mandate, sustainable development is today firmly established among the main work priorities of the Organisation. ■

What is sustainable development?

Sustainable development can be defined in technical terms as a development path along which the maximisation of human well-being for today's generations does not lead to declines in future well-being. Attaining this path requires eliminating those negative externalities that are responsible for natural resource depletion and environmental degradation. It also requires securing those public goods that are essential for economic development to last, such as those provided by well-functioning ecosystems, a healthy environment and a cohesive society. Sustainable development also stresses the importance of retaining the flexibility to respond to future shocks, even when their probability, and the size and location of their effects, cannot be assessed with certainty.

Beyond this technical definition, the notion of sustainable development has gained a broader political usage. Here, it embodies a concern for taking a broad view of what human welfare entails, and for balancing the goals of economic efficiency, social development and environmental protection. Sustainable development also underscores the importance of taking a longer-term perspective about the consequences of today's activities, and of global co-operation among countries to reach viable solutions. These elements have made sustainable development a key objective for domestic and regional policy formulation, as well as for international relations between countries in the 21st century. ■

Are we on a sustainable path?

Analysis of sustainable development would be of little interest if current patterns of economic development were judged to be sustainable. This is not the case. True, strong economic growth – driven by technology advances and by increasing integration between countries – has lifted the economic and social well-being of billions of individuals. But many individuals and countries have remained at the margin of this process, failing to share the benefits of economic growth.

Further, because of inappropriate incentives to consumers and producers, the higher scale of economic activity has often led to pressures on the local and global environment, interfering with the climate system and leading to biodiversity loss, water scarcity and over-exploitation of marine resources. In all these areas, the risks of approaching critical thresholds in the regeneration capacity of renewable resources, and of overloading the absorption (“sink”) functions of the environment, are posing real threats to the long-term sustainability of economic growth.

These trends also pose more immediate and visible economic costs, in the form of health hazards for those exposed to environmental damage. Such hazards are estimated to be responsible for between 2% and 6% of the disease-burden in OECD countries, and for between 8% and 13% in non-OECD countries. Economic damage from environmental hazards also includes insurance costs linked to human-induced nat-

ural disasters — with major weather-related events responsible for annual global economic losses of around \$60 billion in 1998.

Looking ahead over the next 20 years, a projected 75% increase in the volume of world GDP (two-thirds of which would come from OECD countries) and an increase of between 1 and 2 billions in world population (mainly in developing countries) compound the urgency for policy-makers to take the challenge of sustainable development seriously.

However, despite the importance of “de-coupling” economic growth from environmental pressures, the implementation of effective policies is made more difficult by the existence of many unsatisfied social needs. More than 1 billion of the world's population is currently living on less than \$1 per day and billions of individuals in developing countries aspire to enjoy higher consumption levels. These disparities in economic conditions affect domestic policy priorities, and the willingness of individual countries to co-operate in addressing common challenges.

Even within OECD countries, pressing problems of social exclusion, poverty and unemployment are reducing the attention paid to environmental problems. Because of these problems, societies are less willing to accept the structural adjustment associated with shifts towards more environmentally sound patterns of production and consumption. Thus, a social perspective is integral to all discussions about sustainable development. ■

What policies are needed in OECD countries?

Progress towards sustainable development requires changes at both the domestic and international level. At the domestic level, it requires an appropriate mix of instruments (market-based, regulatory and technology policies) and institutions capable of implementing them in an open and accountable manner. OECD countries have accumulated considerable experience in these areas. However, while many of the policy options are well known, their actual implementation has fallen short of what is desired.

Making markets work for sustainable development.

The price system offers the most effective mechanism for correcting inappropriate incentives for production and consumption. By getting prices “right”, markets can be made to work for rather than against sustainable development. To achieve this outcome, however, prices should incorporate the full costs of environmental degradation.

Historically, OECD countries have relied primarily on regulations to meet their environmental goals. Regulations work best when addressing sources of pollution that can be easily identified and monitored. But regulations are often complex and costly to administer.

In contrast, market-based instruments (like taxes and tradable permit systems) have proved to be more effective in achieving environmental goals in a variety of settings, while costing less than alternatives. And more ambitious environmental

goals in the future call for the use of the less costly policy options.

Taxing pollutant emissions or the use of natural resources is one way to internalise the costs that economic activities impose on the environment. But, despite growing evidence of their effectiveness in modifying behaviour, their use has remained limited. Revenues from environment-related taxes in OECD countries still amount to less than 2% of GDP on average. These taxes are also heavily concentrated on motor fuels and vehicles purchased by consumers. Only a small share of revenue comes from taxes on heavy fuels and other industrial pollutants. Also, the application of environmental taxes in OECD countries is often riddled by exemptions to some of the heaviest polluters.

Creating markets for the management of natural resources and for pollution control is another approach to making markets work for sustainable development. A permit trading system puts an upper limit (“cap”) on the level of emissions or natural resource use. Permit quotas are then distributed within that cap, and trading of those permits determines their price.

Over the last decade, trading systems have been set up to:

- (i) manage fish resources (through individual tradable quotas) and water (to control both its quantity and quality);
- (ii) limit emissions of air pollutants from power generation; and
- (iii) influence environmental outcomes indirectly (e.g. through certificates for renewable electricity).

An international trading system for carbon is also part of the flexibility mechanisms envisaged under the Kyoto Protocol to limit the costs of climate mitigation.

There is large scope in all OECD countries for a more extensive and effective use of economic instruments. This is one of the main findings of a review of environmental policies in a number of OECD countries. In fact, even where economic instruments are relatively simple to apply, there are anomalies. For example, fuel taxes on a litre of diesel are almost always lower than on a litre of petrol, even if pollution externalities from a litre of diesel are higher than those from the same quantity of petrol. This tax differentiation is counterproductive from an environmental perspective, and seldom justified on other grounds.

Exceptions from the application of economic instruments granted to heavy polluters are also undermining their environmental effectiveness. Such exceptions can sometimes be justified by concerns about the competitiveness of affected firms and, to a lesser extent, about the effects on the distribution of household income. But their widespread use reflects more the success of lobbying by affected groups than the merits of these arguments per se. And better alternatives to address these competitiveness and distributive concerns are available.

Harnessing science and technology

Technology can also play a key role in de-coupling economic growth from further environmental degradation. But this effect is not automatic. Some innovations help to conserve and protect natural

resources, while others accelerate their exploitation, with unforeseen effects on the environment and human health. Because of these complex effects, and because the benefits of scientific and technological progress often spill over outside the sector or firm that generated it, governments should play a key role in harnessing science and technology to promote sustainable development.

This implies, first of all, providing the right incentives to innovators and users of technology. In this context, instruments aimed at getting the prices right provide the first-best incentives to drive firms to innovate for environmental sustainability, by making many new cleaner technologies profitable immediately.

In addition, governments can ensure that sustainable development priorities are adequately reflected in basic research, and involve experts from different research and private sector communities in the priority-setting process for research. But they can also rely on more active measures, while avoiding risks of locking in industry on a technology path that could prove to be sub-optimal, or of using technology policy as a means to provide domestic industry a first mover advantage over competitors.

Recent approaches to the use of innovation policy for promoting sustainable development have addressed these risks by shifting away from large, publicly sponsored programmes towards the use of public/private partnership, by fostering the formation of clusters of firms in the environment field, and by trying out cleaner technologies (e.g. light weight vehicles) in protected market niches.

Strengthening decision-making

At the institutional level, the interdependent goals of economic growth, social development and environmental protection are managed today by institutions that tend to be independent and fragmented, and that respond to narrow mandates with closed decision-making bodies. Sustainable development stresses the importance of institutions that are willing to integrate economic, social and environmental objectives at each level of policy development and decision-making. It also underscores the importance of:

- (i) credible mechanisms for reporting the outcomes of policy decision and for fostering accountability of results;
- (ii) coherence across government departments and levels of governments; and
- (iii) a transparent and inclusive approach to decision-making, so as to confront conflicting interest and points of view and to address policy trade-offs when these arise.

OECD governments have, to differing degrees, improved their institutional capacity to reach sustainability goals through methodologies to assess the likely environmental effects of specific public sector projects, such as urban development, and, more recently, of structural and sectoral policies. They have also developed methods to assess the economic costs of environmental and other regulations. Independent and parliamentary auditing units, and special commissions departments have proved their value in fostering a culture of accountability in government departments, as well as in increasing

transparency and participation in public policies dealing with sustainable development. Despite progress, however, scope for extending these approaches across the OECD area remains large. ■

How to integrate sustainability goals in sectoral policies?

While government action is needed to limit environmental degradation, misguided policies can generate opposite results. This is especially the case of support granted to particular sectors. These sectors – through the goods and services they provide – contribute to meeting human needs but, through their activities, also impinge on the resources available to other sectors and to future generations. By neglecting this interdependence, sectoral policies may jeopardise other policy objectives and reduce total well-being. Correcting these inconsistencies is crucial for putting a number of sectors on a more sustainable path.

Energy is a key requirement for economic and social development, but certain forms of energy can damage environmental quality when they are produced, transported and used. Energy accounts for 85% of total greenhouse gas emissions in OECD countries. It also contributes substantially to emissions of sulphur oxides, nitrous oxides, volatile organic compounds and particulates.

Past improvements in energy efficiency have already contributed to partially de-couple energy use from economic growth. The energy-price hikes of the 1970s and early 1980s, for example, led to sharp reduc-

tions in the energy intensity of GDP, reductions which were “locked in” when energy prices fell back down again. But a projected 57% increase in world energy consumption over the next 20 years risks impacting heavily on the environment.

The challenge for energy policy is that of reducing the environmental costs of energy production and use, while extending access to basic energy services (such as refrigeration, heating and lighting) in developing countries, and preserving energy security. A coherent strategy to meet these goals will include measures to reduce energy demand (through economic and other instruments), to develop renewable energy, to increase the efficiency of existing energy sources, and to transfer cleaner technologies to developing countries.

Transport contributes to economic growth and to meeting social needs for access and mobility. But it also contributes to environmental degradation, depletion of non-renewable resources, and damage to and loss of human health. Strong growth in transport services, and changes in its mix towards road transport and aviation, have increased many of these negative environmental and social impacts.

Driven by trade and tourism, transport activity is expected to grow strongly in the future. By 2020, motor vehicle usage in kilometres could grow by around 80% globally. Scope exists, however, to moderate this growth and its effects through a range of measures. These include:

- (i) a better integration of transport and land planning policies;
- (ii) a restructuring of transport taxes and charges to better target

externalities (e.g. by replacing fuel excises with per-kilometre charges or tolls);

(iii) shifts of demand for new vehicles towards more fuel-efficient ones (e.g. through fiscal incentives);

(iv) improvements in the use of transport infrastructure; and

(v) greater competition in transport operations, so as to increase productivity and reduce energy consumption and emissions.

Past growth in **agricultural** production in OECD countries has been achieved with fewer workers and less land, but using more water, chemicals and machinery. This has led to increased pollution and natural resource use, greater homogenisation of the landscape, and destruction of wildlife habitat.

Most agricultural subsidies in OECD countries — at around \$340 billion in 1998 — take the form of incentives to keep production high. These subsidies compromise market opportunities of food-exporting developing countries, impose a regressive tax on OECD consumers, and encourage the expansion of farming to environmentally-fragile land and the use of practices that damage the environment. Beyond direct subsidies, agriculture is often exempted from measures applied to other sectors to address environmental damage, despite being a major contributor to these same problems.

Enhancing the contribution of agriculture to sustainability – and meeting a projected 80% increase in global nutritional requirements, with food of ever-increasing safety, by 2050 – will require greater trade liberalisation and lower levels of

domestic support, and shifting towards programmes which are conditional on meeting standards for environmental performance. Reform also requires:

(i) increased use of pollution charges, to correct environmental damage caused by agriculture;

(ii) the creation of markets to compensate farmers for the extra costs incurred when providing essential public goods (such as conservation of biodiversity and habitats);

(iii) the strengthening of the agricultural knowledge system, to encourage farmers to adopt sustainable methods; and

(iv) measures to facilitate the structural adjustment of affected workers and communities. ■

What reforms are needed at the international level?

Many of the most pressing challenges facing today’s societies are global. Their effects are either independent of where the damaging activity takes place (e.g. climate change) or the consequences of continued degradation spill over national borders (e.g. biodiversity loss). These global challenges have shifted political priorities from the local and national levels to the regional and global ones, prompting calls for new multilateral responses.

The importance of more effective international co-operation in addressing these challenges is especially important as globalisation is often perceived as a major threat to sustainability. This perception is

unwarranted. Globalisation is a major force stimulating competition, resource allocation and the international distribution of technology. And, despite differences in the role played by markets and governments, no country in the post-war period has developed successfully by turning its back on international trade and investment. Further, the economic benefits of globalisation can contribute to meeting important environmental and social objectives – provided good policies and framework conditions are in place in the host country.

True, the immediate environmental and social consequence of globalisation may at times be negative, such as when export opportunities or foreign enterprises are responsible for the unsustainable exploitation of open-access resources such as forests. But, in these cases the best option is in general to strengthen environmental and social safeguards rather than to limit globalisation per se.

Scope, however, exists for improving the coherence between international trade and investment regimes, on one side, and environmental and social safeguards, on the other. Many types of policies – such as the elimination of subsidies that are both trade-distorting and environmentally damaging – can lead to win-win outcomes. In China, for example, a reduction in subsidy rates for coal from 64% in 1984 to 11% in 1995 contributed to a 30% decline in the energy intensity of the economy, better economic performance of coal mines, lower government spending and reductions in CO₂ emissions. Also, more systematic assessment of the environmental and social implications of trade

and investment liberalisation would allow more informed decisions by policy-makers, and a better sequencing of the reform process.

Although existing trade and investment agreements provide room for countries to take measures to achieve their own social and environmental goals, many of these policies can have trade and investment implications. Hence the importance of designing environmental (and social) policies in non-protectionist way, and of ensuring that existing trade and investment regimes do not prevent the legitimate (non-discriminatory) exercise of national regulatory power.

Finally, the private sector itself can contribute to dispelling misconceptions about the effects of its own foreign operations. Avenues include the adoption of corporate codes of conduct (codes that outline their basic commitment to the goals of sustainable development) and the wider application of instruments such as the OECD Guidelines for Multinational Enterprises — which provide benchmarks against which corporate performance can be assessed.

The shift in economic weight from OECD to non-OECD countries has increased the role of developing countries in ensuring the integrity of global economic, environmental and social systems. World trade and investment flows involving developing countries have significantly increased in recent years. Private long-term capital flows from OECD to developing countries, for example, exceeded \$100 billion in 1999, almost twice the amount of Official Development Assistance. But a large number of poorer countries have failed to benefit from globalisation. OECD countries can help develop-

ing countries avail themselves of the opportunities of globalisation and to achieve sustainable development domestically in a variety of ways, notably:

- (i) by increased access to needed investment flows and markets, for example reducing tariff peaks and escalation that especially limit access of processed products from developing countries; and
- (ii) by more effective development co-operation programmes, so as to help developing countries, especially the poorest ones, build their own capacity to attract private investment, protect the environment and reduce poverty, and to better integrate their domestic and global development goals. ■

What are the key priorities for action?

The agenda that sustainable development espouses is broad. This underscores the importance of identifying some of the key priorities for action – those where the risks of non-sustainability are highest, and where international co-operation is required to modify current unsustainable trends.

Two such areas are *human interference with the climate system* and the unsustainable management of a range of *natural resources*. In each of these areas, a comprehensive set of measures – encompassing market-based instruments, technology programmes and institutional reforms, both domestically and internationally – is called for.

Human interference with the climate system is causing changes in atmospheric temperature, sea levels

and precipitation patterns, with impacts on the environment, agricultural yields, human settlement and health. New evidence suggests that most of the observed warming over the last 50 years is attributable to human activities, and that the increase in mean surface temperature recorded in the last century (0.6°C) will accelerate in the future (to between 1.4°C and 5.8°C by 2100).

Despite uncertainties on the aggregate size of the impacts of climate change, these impacts will disproportionately affect some of the poorest developing countries (those with the lowest capacity and resources to adapt). Implementation of the emission reduction targets for most industrialised countries envisaged under the Kyoto Protocol is an important step in climate policy, but full use will have to be made of the flexibility mechanisms envisaged under the Protocol to limit the economic costs of mitigation (possibly to a small fraction of 1% of OECD real GDP by 2020).

In the longer term, participation of all major emitters, including those in developing countries, will be needed. In fact, even zero emissions in OECD countries would not prevent global concentration of greenhouse gases from rising if emissions

by other countries grow unabated. The divergence between responsibilities for past emissions (mainly of OECD countries), future pressures (including those from large non-OECD countries) and vulnerability to climate impacts (in some of the poorer countries) makes international equity a central criteria for the design of future climate policies.

Risks of irreversible changes extend to a range of other *natural resources*. While concerns have traditionally focused on the availability of non-renewable resources such as oil and minerals, potential supplies of most of these are not in immediate danger of exhaustion. And as depletion drives up current prices, it spurs resource saving innovations.

In contrast, pressures are high for many renewable resources that provide essential ecosystem services that are not captured by market prices. Similarly, disposal of goods and products is also overloading the absorptive capacity of the environment. Management systems for renewable resources in OECD countries are gradually recognising the importance of these non-market services. Further progress will, however, require the reform of direct subsidies granted to industries based on natural resources, as well as of indirect subsidies provided by

under-charging on the use of infrastructure. Progress will also require a combination of:

- (i) property-rights-based approaches, for some natural resources (e.g. water);
- (ii) financial incentives to ensure an adequate supply of environmental services, when under-supply of these services is a problem; and
- (iii) measures to improve resource efficiency and reduce waste, such as green public purchasing (programmes that provide incentives for public authorities to purchase environmentally friendly goods) and extended producer responsibility (schemes that place the responsibility for a good's disposal and recycling on its producer).

OECD countries also have an important role to play in enhancing the capacity of developing countries to manage their own resources in a sustainable manner, through capacity-building and technology transfers, as well as by developing equitable rules for the sharing of the benefits arising out of the utilisation of natural and generic resources. ■

For further reading

- **Sustainable Development - Critical Issues**, 2001
ISBN: 92-64-18695-6, Euros 90, 420 p.
- **Policies to Enhance Sustainable Development**, 2001. ISBN: 92-64-18661-1, Euros 20, 108p.
- **OECD Environmental Outlook**, 2001
ISBN: 92-64-18615-8.
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Chapter 6 "Encouraging environmentally sustainable growth: experience in OECD countries"
ISBN: 92-64-19100-3, Euros 75, 328 p.
- **The Well-being of Nations. The role Human and Social Capital**, 2001
ISBN: 92-64-18589-5, Euros 29, 120 p.
- **International Science and Technology Co-operation. Towards Sustainable Development, Proceeding of the OECD Seoul Conference, November 2000**, 2001.
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- **Governance for Sustainable Development: Adapting Institutions and Decision-Making in 5 OECD Countries**, 2001,
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- **Nuclear Energy in a Sustainable Development Perspective, OECD Nuclear Energy Agency**, 2000
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- **Towards Sustainable Development: Indicators to Monitor Process. Proceedings of the Rome Conference**, 2000.
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- **Frameworks to Measure Sustainable Development**, 2000.
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- **Transition to Responsible Fisheries: Economic and Policy Implications**, 2000
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- **Action Against Climate Change. The Kyoto Protocol and Beyond**, 1999
ISBN: 92-64-17113-4, Euros 19, 140 p.
- **National Climate Policies and the Kyoto Protocol**, 1999 - ISBN: 92-64-17114-2, Euros 19, 88 p.
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