RECOMMENDATION OF THE COUNCIL ON

THE USE OF ECONOMIC INSTRUMENTS IN PROMOTING THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY

Endorsed by Environment Ministers on 20 April 2004

Adopted by the OECD Council on 21 April 2004

OECD

THE COUNCIL,

Having regard to Article 5 b) of the Convention on the Organisation for Economic Co-operation and Development of 14 December 1960;

Having regard to the Recommendation of the Council on Guiding Principles Concerning International Economic Aspects of Environmental Policies of 26 May 1972 [C(72)128];

Having regard to the Recommendation of the Council on the Use of Economic Instruments in Environmental Policy of 31 January 1991 [C(90)177/FINAL], which recommended *inter alia* that member countries: i) work towards improving the allocation and efficient use of natural and environmental resources by means of economic instruments, so as to better reflect the social cost of using these resources; and ii) make effort to reach further agreement at international level on the use of environmental policy instruments with respect to solving regional or global environmental problems, as well as ensuring sustainable development;

Having regard to existing Council Acts which recommend the use of economic instruments in various fields of environmental policy, namely: the Recommendation of the Council of 28th September 1976 on a Comprehensive Waste Management Policy [C(76)155(Final); the Recommendation of the Council of 5th April 1978 on Water Management Policies and Instruments [C(78)4(Final)]; the Recommendation of the Council of 3rd February 1978 on the Re-Use and Recycling of Beverage Containers [C(78)8(Final)]; the Recommendation of the Council of 3rd July 1978 on Noise Abatement Policies [C(78)73(Final)]; the Recommendation of the Council of 20th June 1985 on Strengthening Noise Abatement Policies [C(85)103]; the Recommendation of the Council of 31st March 1989 on Water Resource Management Policies: Integration, Demand management, and Groundwater Protection [C(89)12(Final)]; the Recommendation of the Council on Coastal Zone Management of 23 July 1992 [C(92)114(Final)]; the Recommendation of the Council on Improving the Environmental Performance of Government of 20 February 1996 [C(96)39(Final)];

Having regard to the objectives concerning biodiversity management expressed in the OECD *Environmental Strategy for the First Decade of the 21st Century*, adopted by OECD Environment Ministers and endorsed by the OECD Council at Ministerial level in May 2001, which *inter alia* call for significant reductions in threats to ecosystems and their species from habitat loss and fragmentation, changes in land use patterns, pollution, introduction of invasive species, and over-exploitation or extinction of wild species; and considering that OECD Environment Ministers agreed in the same *Strategy* that "... countries should apply precaution as appropriate in situations where there is a lack of scientific certainty";

Having regard to Articles 10 and 11 of the Convention on Biological Diversity, which call respectively on Parties to "integrate consideration of the conservation and sustainable use of biological resources into national decision-making ..."; and to "as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity"

Having regard to Decisions IV/10A, V/15, VI/15 (including Annex 1), and VII/18 of the Conference of Parties to the Convention on Biological Diversity, each of which discuss the links between the assessment of biodiversity and the implementation of appropriate incentive measures, and *inter alia* "... requests the Executive Secretary to collaborate with OECD ... in order to engage in a coordinated effort ... to elaborate proposals for the design and implementation of incentive measures for the conservation and sustainable use of biodiversity...";

Recalling the objective of significantly reducing the rate of the biodiversity loss by 2010 included in the World Summit on Sustainable Development's Plan of Implementation (WSSD/POI), and having regard to Paragraph 44(a) of that WSSD/POI which calls on countries *inter alia* to: "integrate the objectives of the Convention [on Biological Diversity] into global, regional, and national sectoral and cross-sectoral programmes and policies, in particular in the programmes and policies of the economic sectors of countries ...";

On the proposal of the Environment Policy Committee:

I. **Recommends** that member countries:

(i) establish and apply a policy framework aimed at ensuring the efficient long-term conservation and sustainable use of biodiversity and its related resources.[1] The overarching goal of such a framework should be to ensure maximum net benefits[2], both now and in the future, from the use and conservation of resources stemming from biodiversity — as well as an equitable sharing of these benefits that is consistent with national, and applicable international, legislation;

(ii) make greater and more consistent use of domestic economic instruments[3] in the application of their biodiversity policy frameworks, while attempting to reach further agreement at the international level on the use of economic-based policy instruments with respect to biodiversity conservation and management;

(iii) integrate market and non-market (i.e. non-price) instruments — taking account of the respective advantages of each in lowering information and transactions costs, and in addressing the "public" values of biodiversity — into an effective and efficient mix of policies; and

(iv) integrate biodiversity policy objectives in a cost-effective manner into government sectoral policies, in order to avoid undue adverse effects on biodiversity and its related resources.

II. **Recommends** that, when designing and implementing their biodiversity policies, member countries take into account the Considerations set out in the Annex hereto, which are an integral part of this Recommendation.

III. **Instructs** the Environment Policy Committee and other relevant bodies of the Organisation:

(i) to support member countries' efforts in applying incentives-based approaches to achieving biodiversity policy objectives: by examining the feasibility of such instruments; by providing appropriate guidance on their use; and by exchanging information concerning the design or choice of particular instruments, including the reform of existing and proposed measures that (could) have harmful effects on biodiversity;

(ii) to continue to support efforts by the Convention on Biological Diversity to improve the efficient and effective application of incentives-based approaches to biodiversity conservation and sustainable use;

(iii) to review the actions taken by member countries pursuant to this Recommendation within the three years following the adoption of this Recommendation; and

(iv) to assist non-member countries in developing and implementing policy frameworks that contribute to the achievement of the objectives of this Recommendation in those countries.

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1. The *restoration* of degraded biodiversity-related resources, when warranted, is also fully consistent with achieving the goals of this Recommendation.

2. The term *net benefits* is used here to describe a welfare perspective (including environmental, economic and social welfare).

3. *Economic instruments* is used here in a broad sense, to include all instruments that change the incentives individuals face for undertaking particular actions.

ANNEX. ECONOMIC CONSIDERATIONS TO BE TAKEN INTO ACCOUNT BY OECD MEMBER COUNTRIES IN PROMOTING THE CONSERVATION AND SUSTAINABLE USE OF BIODIVERSITY[4,5]

I. FRAMEWORK FOR THE USE OF ECONOMIC INSTRUMENTS IN BIODIVERSITY CONSERVATION AND SUSTAINABLE USE: KEY ELEMENTS

- The overall *goal* of a policy framework for biodiversity management should be to achieve efficient long-term conservation and sustainable use of biodiversity and related resources — as well as an equitable sharing of the benefits that is consistent with national, and applicable international, legislation. When a biodiversity-policy framework accounts for all public values of biodiversity, and for the consequences that its use may subsequently have on all affected individuals (including future generations), use of the biodiversity resources will be consistent with achieving the greatest net benefit to society over the long term.
- The choice of particular instruments is complex and dependent upon specific institutional, economic and social needs. Policy options should be systematically analysed with a view towards minimising the costs of public administration, monitoring and enforcement, as well as the private costs of implementation. Since market-based instruments are often cost-effective — and generally under-utilised — they should be promoted. Nonetheless, in many cases it will also be necessary to use non-market-based instruments in an effective policy mix — in order to achieve an efficient long-term level of conservation and sustainable use of biodiversity.
- Properly designed and implemented, economic instruments will be important parts of an *incentive-based approach* to sustainable biodiversity management. Using these economic instruments will often require some form of *valuation* of the underlying biodiversity resources in order to integrate non-market aspects of biodiversity into economic decisions. This will help in setting policy goals at an appropriate level.
- Economic instruments should also be seen within the broader context of a market-based approach to the promotion of biodiversity goals. A *market creation* agenda will therefore be an important element of an efficient and effective management framework for biodiversity. Part of that agenda will involve establishing the rules and procedures that make markets work efficiently and effectively. Frameworks for access agreements that facilitate market-based exchanges of biodiversity-related resources are examples of initiatives in this direction.
- Sector policies should be developed in ways that are consistent with biodiversity objectives. Biodiversity impact assessment will usually be an important component of this search for *policy coherence*.
- There is a need to work with other OECD and non-member countries to implement efficient and sustainable biodiversity management policies at the *international level* (e.g. through the development co-operation agenda; for protecting migratory species and aquatic resources, etc), within the context of available international biodiversity-related agreements while reflecting the particular costs and benefits facing individual countries.
- *Appropriate targets and timetables* need to be established for efficient and effective biodiversity policies, and progress toward these goals needs to be *periodically monitored*.

II. INCENTIVE-BASED INSTRUMENTS IN BIODIVERSITY MANAGEMENT

Incentive measures are important elements of strategies for biodiversity conservation and sustainable use. Incentive measures often make use of the price system and market forces for achieving their objectives. They also:

- Rely on the premise that rational individuals will respond to changes in relative costs and benefits of the choices they make;
- Help reconcile differences between the value of biodiversity to individuals, and to society as a whole;
- Increase returns to activities that conserve or restore ecosystems that are particularly important for biodiversity;
- Increase the cost of (i.e. lower the returns to) activities that damage ecosystems that are particularly important for biodiversity; and
- Level the playing field between the (generally observable use-) returns to biodiversity degradation and the (generally non-observable non-use-) returns to biodiversity conservation and enhancement/restoration.

The use of economic instruments for biodiversity protection is predicated on the assumption that the social costs (benefits) of biodiversity use, degradation, and restoration can be internalised in the price of activities that cause these losses (gains) in biodiversity.

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4. The Considerations set out in this Annex are based on reviews of member countries' experiences with economic approaches to biodiversity management, as well as various biodiversity management frameworks developed by the Working Group on the Economic Aspects of Biodiversity (WGEAB). Further detail can be found in the publications of that Group, notably in: OECD (1999). *Handbook of Incentive Measures for Biodiversity: Design and Implementation*; OECD (2002). *Handbook of Biodiversity Valuation: A Guide for Policy-Makers;* OECD (2003). *Harnessing Markets for Biodiversity: Towards Conservation and Sustainable Use*; and OECD (forthcoming 2004). *Handbook on Market Creation for Biodiversity* (working title).

5. The WGEAB work that underpins this Recommendation was also referenced extensively in Decision V1/15 (Annex 1) of the CBD Conference of the Parties.

Biodiversity management problems arise in different ways in different ecosystems and communities. Incentive measures therefore need to be designed with the specific needs of individual ecosystems and communities in mind. Whether incentive or other measures are used should be based on a consideration of which ones are likely to be most efficient and effective.

Elements that are especially important for the successful implementation of incentive measures related to biodiversity policies include (within both OECD-member and non-member countries):

- *Adequate information* about biodiversity-related resources, including their states; the pressures to which they are exposed; and the likelihood that individual incentive measures will be successful, should they be applied to a given situation;
- *Building the capacity* to design, implement, monitor, and enforce particular incentive measures, and in particular biodiversity management contexts; and
- Involving indigenous and local communities and stakeholders in the design and implementation of incentive measures.

Implementation of incentive measures for biodiversity conservation and sustainable management involves *inter alia* the following key steps:

- *Identification of the underlying problem and preliminary assessment of the potential role of incentive measures*: Data collection; preliminary assessment of the need for, and the potential utility of, the incentive measure; and stakeholder involvement will each contribute at this stage;
- *Design of the incentive measure*: Assess potential options on the basis of efficiency, effectiveness, equity in benefits and burdens, political acceptability, and predictability of the likely impact of the measure;
- *Building political support and institutional capacity*: This will include explicitly recognising the (existing) policy mix into which the incentive measure will now be introduced; personnel training; communication; examining complementary measures which may also be necessary; and developing appropriate links to private sector actors; and
- *Managing, monitoring, and enforcing the measure*: Setting aside sufficient funding for each of these steps will be important, as will revising the design of the measure over time, in order to reflect changing conditions.

Incentive measures

The range of market (and market-support) measures available to governments for encouraging biodiversity conservation and sustainable use includes:

Economic incentives

- Fees, charges and environmental taxes;
- Payments for ecosystem services;
- Assignment of well-defined property rights;
- Reform or removal of harmful subsidies.

Funds

- Environmental funds and public financing.

Framework incentives

- Information provision, scientific and technical capacity building;
- Economic valuation;
- Market creation;
- Institution-building and stakeholder involvement.

Examples of market measures include, *inter alia:*

- Charges or non-compliance fees related to certain types of forestry activities;
- Liability fees for the maintenance or rehabilitation of ecologically-sensitive lands;
- Fishing license fees or taxes (whose objective is resource management);
- Levies for the abstraction of surface water or groundwater;
- Support for biodiversity-related labelling schemes;
- Liability payments for biodiversity damages (including interim losses);

- Charges for:
  - Use of public lands for grazing in agriculture;
  - Use of sensitive lands;
  - Hunting or fishing of threatened species; and
  - Tourism in natural parks.
- Payments to farmers within a watershed for using farming techniques that maintain the quality of water resources.

Combinations of instruments

To achieve biodiversity–related policy objectives, economic instruments will often need to be used in conjunction with non-market instruments (standards, regulations, access restrictions, management plans, etc.). Both market and non-market components of these "mixes" of policy measures should be designed and implemented to complement each other.

Reform or removal of perverse incentives

Government-based economic support can take several forms, including *inter alia:* direct payments; tax exemptions or reductions; financial incentives for preferred inputs or equipment; market price support; credit guarantees; technical assistance; or free use of infrastructure. When aimed at general economic/social objectives, these instruments can sometimes lead to harmful effects on biodiversity and its related resources, even if their original intent had nothing to do with biodiversity.

Reform of these policies — in order to eliminate their harmful effects — should be an ongoing objective. When reform leads to the reduction of this support, it will not only bring benefits through reduced biodiversity loss, but will also improve the fiscal position of governments (assuming the support was originally provided from government budgets). In addition, all new economic support policies should be subjected *ex ante* to a review of their likely contribution to society's welfare (including their potential harmful effects on biodiversity). They should also be subjected to *ex post* review, to ensure these benefits continue to accrue over time.

Reform of perverse incentives related to biodiversity may be difficult to implement in practice, because some existing beneficiaries could lose wealth as a consequence of the reforms (although some could also gain). In many cases, however, it will be possible to design alternative policies which achieve the original social and economic goals of the support programme, but without the same negative consequences for biodiversity.

It should also be recognised that not all support programmes exert negative pressures on biodiversity resources — some also have the effect of improving opportunities for biodiversity conservation and sustainable use. Nevertheless, these programmes may still require periodic reform, if the economic costs associated with them exceed the public values associated with the (now protected) biodiversity resources.

Two elements of the *framework incentives* listed above are especially important for incentive measures — *valuation* of biodiversity and *market creation*. These issues are addressed in more detail in the following Sections.

III. VALUING BIODIVERSITY

Incentives to achieve particular biodiversity outcomes aim directly or indirectly to move the market price toward a level that reflects full internalisation in management decisions of the values of the goods and services that biodiversity makes possible.

In many circumstances, policies to *directly* internalise impacts on biodiversity are not feasible (i.e. impacts on biodiversity cannot be reflected in resource-use decisions through the specific creation of markets for those impacts). In those cases, more *indirect* measures of government policy (market or non-market) may be necessary (e.g. taxes, levies, regulations, etc). Taxes, for example, are "indirect" because they can only approximately reflect the collective loss associated with biodiversity degradation. That is, they require policy-makers to estimate the level of collective loss — this loss cannot be observed in the market — and then impose that estimated cost on users of biodiversity-related resources.

To obtain such information, some metric of the incremental costs of using biodiversity-related resources will be necessary, in order to properly calibrate the policy instrument under consideration (e.g. to set a tax at the socially optimum level). *Economic* valuation can help in this process by providing a monetary measure of the impacts involved.

In addition to this *economic* calculation, however, policy-makers will also need information regarding *non-economic* criteria (e.g. moral choices, aesthetic, cultural, and spiritual values). Several techniques exist for describing these criteria in terms that are useful for decision-making (e.g. multi-criteria analysis, focus groups, etc.). Both economic and non-economic elements will therefore enter into most biodiversity policy decisions.

In principle, economic valuation techniques should be used only to the point where anticipated incremental (including long-term) improvements in the decision are commensurate with the costs of undertaking the valuation in the first place (i.e. a cost/benefit criterion should be applied to the valuation study itself). The remainder of this section is primarily concerned with *economic* valuation.

Assessing the economic value of biodiversity in a particular policy context should include an examination of all *use* and *non-use* values. Examples of use values include the services provided by ecosystems. Non-use values include, *inter alia:* option values, existence values, and bequest values.

Valuing the *market-based* (private) goods and services provided by biodiversity-related resources (i.e. moving toward full internalisation) is inherently easier than valuing *non-market-based* (public) ones. Nevertheless, acceptable methodologies exist for many of both types, and should be applied as appropriate. The use of more *ad hoc* approaches (such as narrative statements) may also sometimes be appropriate.

Many biodiversity values will engage public interests; however, some will also engage private interests to a sufficient extent that private markets can themselves approximate the best social use of the biodiversity-related resources. Both elements need to be recognised as a basis for considering the respective roles of governments and private actors in subsequent management of biodiversity-related resources.

Although debate continues about the applicability of economic techniques to the valuation of (non-marketed) environmental resources, use of these techniques in biodiversity management is growing. This growth is mainly due to advances in the theoretical methodologies that underlie these processes — which have allowed them to account for broader aspects of environmental resources that are of interest to policy-makers.

Nevertheless, there is still a gap between the highly refined assessments of value that are desirable for decision-making, and the ability of valuation techniques to meet this demand. Thus, while valuation techniques remain important *contributors* to the decision-making framework, other approaches will also often need to be taken into account in arriving at the final policy decision.

A wide ***range*** of quantitative valuation methods exists for use in developing and implementing biodiversity policy. Some of the more commonly used approaches include:

- *Market price* approaches:
  - Value on the basis of: observed market values for biodiversity-related goods and services; changes in the productivity of biodiversity-related resources; and cost considerations (replacement costs; restoration costs; or the value of preventative expenditures).
- *Revealed preference approaches:*
  - Value on the basis of the changes in market prices that result from changes in non-market (biodiversity-related) assets (travel cost method; recreational use method; hedonic method).
- *Stated preference approaches:*
  - Value on the basis of stated "willingness to pay" for biodiversity conservation and restoration (contingent valuation method).
- *Benefits transfer approaches:*
  - Rigorously value in one context, with these values then being adjusted for transfer to other (similar) contexts.

IV. MARKET CREATION IN BIODIVERSITY MANAGEMENT

In the same way that market-based incentives operate to reduce inappropriate pressures on biodiversity-related resources, use of markets more broadly can contribute to improved biodiversity management. Market creation works through the removal of barriers to trading, including the establishment and assignment of well-defined and stable property and/or user rights.[6] Market creation is based on the premise that holders of these property rights will maximise the value of their resources over time, thereby optimising both the level and the cost of biodiversity use, conservation, and restoration. In short, market creation involves more than just the use of market incentives.

Governments have two important roles to play in supporting markets for biodiversity-related resources. First, they need to establish the right framework conditions under which private and public operators can efficiently supply biodiversity-related resources to users. This role was discussed earlier (Section II). Second, governments need to ensure that public biodiversity-related goods are provided in the most efficient and effective manner possible. Creating markets implies putting in place the right legal/incentive frameworks to overcome characteristics such as *non-excludability* and/or *non-rivalry* in use, both of which can make public goods unsuitable for trading in markets — even when individuals would be willing to pay for them.

Markets will, by themselves, result in the right amount of use or conservation of biodiversity-related resources when the market can be made to reflect the full (including public) value to society of these resources (and also when all non-marketed consequences associated with their use are fully reflected in management decisions). Market *creation* for biodiversity is therefore the culmination of efforts to develop instruments and frameworks that capture public values. The emergence of private parks in many regions of the world demonstrates that there is scope for capturing public values in private markets. For those parks, the *private* value of their uniqueness is high enough to support public biodiversity objectives. However, the *public* value of the parks will typically be greater than those private values. Economic instruments that can capture some of these public values can improve biodiversity outcomes by extending the application of markets.

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6. *Property rights* are assumed here to include even limited rights, such as easements on real estate that restrict the use of property.

There are several specific markets in which biodiversity-compatible activity is already occurring, including *inter alia*: organic agriculture; sustainable forestry; non-timber forest products; genetic resources; and eco-tourism. Two highly successful examples of market creation — related to biodiversity resource management — where the instruments themselves created the market, and where the link to economic policy is clear, are:

- *Trading in access to fishing rights* — Property rights can sometimes be assigned over the harvesting of commercial fish species through individual transferable quotas (ITQs). Markets are created around the ITQs, which are transferable from one fisher to another — their value therefore becomes associated with their potential to generate income for individual fishers. In order to maintain this value over time, rights holders will tend to protect the natural resource that underlies it (i.e. the fish, and the biodiversity associated with those fish).
- *Transferable development rights (TDRs)* — TDRs involve *partial* transfers of rights to use land: transfers that, in a biodiversity management context, restrict activities on ecologically-sensitive private lands. These can include restrictions on development, perhaps by implementing legally-binding property covenants or land management plans, both of which may be based on biodiversity management goals. The gains to biodiversity result from the restrictions that are imposed, whereas the efficiency gains result from having the limited development rights exercised by the most economic use.

Markets will also need to be monitored and even guided to ensure they result in net benefits for society as a whole. For example, trading in (illegal) products from endangered species highlights the potential adverse consequences of markets that do not take account of public values and externalities.

The absence of appropriate ***information*** can inhibit the development and implementation of market approaches to biodiversity conservation, use, and restoration. Information can be provided through such mechanisms as labelling, certification, direct information provision, technical capacity building, etc. Information provision is an important part of the foundation that enables incentive measures to work effectively and efficiently, thereby also underpinning the creation of markets. Scientific knowledge is an important part of this information function, so governments need to develop policies that establish the right conditions for new knowledge to emerge related to biodiversity conservation. Information assets currently being maintained in databases also need to be fully exploited in support of biodiversity conservation and management objectives. This exploitation can also extend to the development of indicators for monitoring biodiversity change (trends and patterns), which can be used to evaluate policy performance and to update the existing policies.

The active ***engagement of stakeholders*** in the development and implementation of biodiversity management policies is also an important key to the success of market creation policies. Institutional arrangements should therefore be installed to ensure the appropriate level of engagement with stakeholders in key decisions affecting biodiversity-related resources. Local community networks that identify and support local biodiversity objectives can make important contributions in this regard. As is the case with information provision, the early engagement of stakeholders is an important part of the market creation process.

Dedicated funds for biodiversity management purposes can tap into a growing pool of global savings that is seeking out "environmentally-friendly" investment opportunities. They are part of a growing development of innovative "green" financing approaches and financial mechanisms. Examples include venture capital funds that target environment-related start-up firms; mutual funds that invest in firms with a "green" charter; social equity funds; and the involvement of local banks in funding sustainable resource-use projects. Policies to enhance the role of financial markets in the sustainable use of biodiversity support (and create) markets by allowing these funds to more effectively seek out profitable opportunities.

Using capital markets to allocate these funds for biodiversity purposes increases the overall efficiency and effectiveness of the management process. The specialised knowledge, embodied in local branches of local markets, combined with the national and international coverage of some financial institutions, allows savings in one region to find their way to other locations, where they can be used most profitably — thereby contributing to the creation of markets for biodiversity. Moreover, using capital markets will allow local constraints in financial resources (which may be particularly acute in non-member countries) to be overcome.