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**INCENTIVE MEASURES**

*Compilation of suggestions on the development of definitions on incentive measures*

*Note by the Executive Secretary*

**I. INTRODUCTION**

1. At its tenth meeting, held in Bangkok in February 2005, the Subsidiary Body on Scientific, Technical and Technological Advice further considered the draft proposals for the application of ways and means to remove or mitigate perverse incentives. In recommendation X/8, SBSTTA recommended that the Conference of the Parties at its eighth meeting: (a) considers the draft proposals included in the annex to the present recommendation with a view to finalizing them, in conjunction with the outcomes of the consideration of positive incentives by the Subsidiary Body on Scientific, Technical and Technological Advice at its eleventh meeting; and (b) considers development of definitions on the basis of suggestions put forward by Parties and relevant organizations before the eighth meeting of the Conference of the Parties.

2. Further to this recommendation, the Executive Secretary sent, on 21 March 2005, notifications 028-2005 and 029-2005 inviting Parties, Governments and relevant international organizations to convey their suggestions on the development of definitions to the Secretariat for compilation. Communications received by the Executive Secretary pursuant to this invitation are compiled and synthesized in the annex to the present note. 1/

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\* UNEP/CBD/COP/8/1.

1/ The communications were also made available on the website of the Convention, at [www.biodiv.org](http://www.biodiv.org) (please click on "programmes and issues" then on "economics, trade and incentive measures" and on "recent submissions – definitions").

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*Annex*

**COMPILATION OF SUGGESTIONS RECEIVED FROM PARTIES, GOVERNMENTS AND  
RELEVANT INTERNATIONAL ORGANIZATIONS ON THE DEVELOPMENT OF  
DEFINITIONS**

**A. *Communications received from Parties***

**1. *Argentina***

Argentina expressed the view “that the only term that is necessary to define or best define, is that of ‘practice’ because the definition given in the annex 2/ (last sentence of the first paragraph) is not adequate and it does not correspond to any recognized source”.

Argentina further explained that it undertook research to identify some general definitions provided by different very well-known English dictionaries and specialized books, with the following results:

“Definitions of ‘practice’

- Something that is usually or regularly done, often as a habit, tradition or custom
  - To do or perform often, customarily or habitually
  - To do something regularly or customarily
- The usual way of doing something
- An activity that is regular, habitual or customary
- The act of process of doing a thing
- Repeated performance
- A habitual or customary action or way of doing something
- A habitual way of behaving.”

From the point of view of Argentina, “the definition included in the annex 3/ (practice as ‘any activity undertaken by individuals, communities, companies and organizations that is based in customary law, social norms and cultural traditions’) should be changed in the text by any of the listed above”.

**2. *India***

India submitted a document of which a verbatim reproduction is provided below.

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2/ Argentina refers to the annex to SBSTTA recommendation X/8, providing the draft proposals for the application of ways and means to remove or mitigate perverse incentives.

3/ See the previous footnote.

*“PERVERSE INCENTIVES: DEFINITION, TYPES, IDENTIFICATION, REMOVAL AND MITIGATION*

*1. Definition*

Perverse incentive is a policy or practice that encourages, either directly or indirectly, resource uses leading to the degradation of biodiversity. The types of perverse incentives identified are: (a) environmentally perverse government subsidies, (b) persistence of environmental externalities, and (c) laws or customary practices governing resource use. Government has an important role in removing environmentally perverse subsidies and changing the laws and regulations which contribute to biodiversity loss. Change of environmentally harmful customary resource use practices necessitates government intervention or/and creating social awareness.

On the concept of subsidies, there are certain issues which need discussion. In welfare economics, in the absence of external effects, subsidy is defined as long run marginal cost minus price. In the presence of negative externalities, the correct definition is long run marginal social cost minus price. These definitions are based on economic efficiency criterion (in Paretian sense/also consistent with Hotelling's work). In case of perverse subsidy, in the presence of external effects, there are two issues: 1. Under competitive conditions price is below marginal cost and therefore the output is above the socially desirable level. 2. As the output increases, because of perverse subsidies, the marginal external effect (damage) will also increase. In fact the marginal external damage may be an increasing function of output or input usage as in case of WTO's amber box subsidy (e.g. in case of subsidised electricity for farms). In such a situation, subsidy aggravates environmental damage. When there are multiple factors affecting costs/ influencing environmental damage, it is desirable to use combinatorial cost accounting or cooperative game theory to measure subsidies and cross subsidies and incremental damages. There are data problems. Normative costing based on expert opinion or experimental studies is one alternative to actual data collection. As a first step, case studies may be conducted in situations where perverse subsidies continue to persist.

*2. Types of biodiversity loss*

The biodiversity loss may result from habitat conversion, intensive farming, adoption of narrow range of crop and animal varieties, unsustainable harvesting in forests and fisheries, and spread of invasive alien species.

The underlying causes of biodiversity loss can be traced to social or economic forces and institutional framework. In designing policy for biodiversity loss, it is desirable to distinguish between the following two types. The first type of biodiversity loss occurs when society takes a conscious decision to incur biodiversity loss in order to achieve some developmental goal such as employment generation, poverty alleviation, or self-reliance. In such a case the trade-off between development and environment can be assessed by means of social cost benefit analysis. In this framework, cost effective options for minimising biodiversity loss or/ and adoption of mitigation policies including biodiversity offsets can be analysed. Precautionary approach is necessary when irreversible damages are likely. In this case, environmental considerations are internalised in decision-making.

The second type of biodiversity loss arises when activities are undertaken to achieve goals other than environmental protection, ignoring the side effects on environment. This type of problem may arise because (a) environmental considerations are not internalised either due to lack of awareness or/ and policies; (b) environmental effects are unanticipated at the policy making stage, or (c) the environmental effects are perceived to be negligible or/and far below the assimilative/carrying capacity of the environment.

*3. Identification of the causes attributable to perverse incentives.*

The identification problem arises because of (a) multiplicity of and interaction among the factors, (b) imperfect knowledge linking the cause and the effect, (c) loss occurring over time and beyond the region in which the activity is carried out, and (d) variations in preventive and curative measures undertaken by different agents and spatial differences in assimilative capacities of regions. Despite the

challenges, serious efforts should be made to identify the extent of loss attributable to different perverse incentives.

#### 4. *Why is removal/mitigation of perverse incentives necessary?*

The global community has accepted sustainable development as a policy goal. Hence incentives which result in unsustainable development should be removed as early as possible. Perverse subsidies also drain government resources.

#### 5. *Removal of perverse subsidies*

Looking from the narrow perspective of minimising biodiversity loss, the case for removal of perverse incentives such as government subsidies e.g. price support for crops, subsidies for agricultural inputs like water, fertiliser and pesticides, and low electricity charges is strong. However, before removal of the subsidies, the consequences of their removal must be identified. In the Indian context, increases in agricultural production, creation of livelihood opportunities, and distributional issues were (and still are) important goals. In some of the past decisions, intersectoral concerns were involved e.g. subsidised electricity for farmers because irrigation rates for ground water were low, reduction of rural urban disparity. International concerns such as reluctance of developed countries such as the USA, the EU, and Japan to reduce producer subsidy equivalents, make it politically difficult for developing countries to reduce the agricultural subsidies. In view of multiple goals, with poverty alleviation becoming a primary goal, lot of preparatory work has to be done in the form of social cost benefit analysis of alternative options for removal of perverse incentives, raising awareness of biodiversity values, identification and removal of political obstacles, and design of cost effective mitigation policies.

#### 6. *Mitigation*

The need for mitigation policies in the context of removal of perverse incentives arises for the following reasons: 1. Some of the incentives were designed when biodiversity loss was not a social concern or/and biodiversity loss was unanticipated. 2. Goals such as economic growth, employment generation, and poverty alleviation were dominant goals in the past. Intra-generational equity was viewed more important than inter-generational equity. 3. As some biodiversity loss is global in nature, and as developing countries are relatively rich in biodiversity, assistance from developed countries for conservation and sustainable use of biological resources is necessary. However, there is ample scope for removal of perverse government subsidies which do not affect the poor. At present many subsidies are not either properly targeted or, due to leakages and accessibility problem the subsidies do not reach the poor. In any case compensation schemes for the poor and phased reductions for the others are necessary to gain political acceptance of policies and avoid sudden decreases in the incomes of the affected people.”

### **B. *Communications received from organizations***

#### 1. *The Food and Agriculture Organization of the United Nations (FAO)*

FAO indicated that it:

“[FAO] has no objection to the CBD's definition of perverse incentives as a policy or practice that encourages either directly or indirectly, resource uses leading to the degradation and loss of biological diversity. However in the discussion on proposals for ways and means to remove or mitigate perverse incentives it appears to suggest that all perverse incentives should be either removed or mitigated (Paragraph 3 Decision VII/18), which is both unrealistic and inadvisable. As noted in paragraphs 9 and 10 of the same decision, perverse incentives are often unintended side effects of policies intended to attain important social objectives and removing or mitigating the perverse incentives will entail a cost. In some cases the costs may be so high in terms of foregone social benefits that removing or mitigating the perverse incentive is not merited. While these concepts are found in the overall discussion of perverse incentives they should be highlighted earlier in the discussion, particularly in discussing the phases in the process of removing or mitigating such measures. (Paragraph 2). We suggest that an additional phase be added between

steps a) and b) to identify the costs and benefits associated with mitigation or removal and prioritization of measures.”

FAO further stated that:

“[D]efining biodiversity loss is another important issue that needs to be addressed in defining incentive measures. In some cases policies may increase one aspect of biodiversity while reducing another (e.g. increases in temporal crop genetic diversity may lead to decreases in spatial crop genetic diversity). Paragraph 8 of Decision VII/18 notes the importance of identifying and quantifying the scope and extent to which incentive measures could impact biodiversity. Adding a reference to the importance of identifying the type of biodiversity loss perverse incentives may cause should be added in this context.”

## 2. *Organisation for Economic Co-operation and Development (OECD)*

The Organisation for Economic Co-operation and Development submitted a document entitled “Some OECD Usage of Terms for Biodiversity”.<sup>4/</sup> The document referred to the recommendation expressed by the Subsidiary Body on Scientific, Technical and Technological Advice, on the development of definitions, and to notification 029/2005 sent by the Executive Secretary, conveying the invitation to submit suggestions on the development of definitions.

The document further explains that “at its nineteenth meeting on 7-8 April 2005, the OECD Working Group on Economic Aspects of Biodiversity (WGEAB) considered a preliminary list of terms that have been in general usage in its publications on biodiversity. Annex I contains an updated list of those terms and provides some general-usage explanations from additional sources that were deemed consistent with the work of the WGEAB, and appropriate for consideration by the Conference of the Parties to the Convention on Biological Diversity.”

The document also noted that, “in accordance with the decision taken by the WGEAB, these terms are sent to the CBD to be used to inform its deliberations concerning the development of definitions”.

A verbatim reproduction of annex I of the document, including footnotes, is provided below.

### “ANNEX I: PROPOSED LIST OF TERMS

**Social welfare** is referred to as the summation of the well-being of all the individuals in society. Welfare is measured ordinally, in relative terms. That is to say, welfare is not measured in monetary terms, but instead one level of welfare is compared with another level of welfare. Social welfare is improved when there is a net gain in well-being. In a biodiversity context, loss of biodiversity can only improve social welfare if the gain to society (resulting from the activity associated with the loss of biodiversity) outweighs the loss to society as a whole, including its medium and long-term effects.

**Incentive measure<sup>5</sup>:** any measure implemented to achieve biodiversity outcomes that induces changes in behaviour. The term is often used interchangeably (and misleadingly) with *market incentive*. A market incentive is intended to refer to the more limited measures that directly change market prices for market participants. Incentives rely, to a large degree, on the assumption of economic rationality on the part of targeted individuals, since they change the costs or benefits of an activity and leave it to individuals

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4/ ENV/EPOC/GSP/BIO(2005)6/FINAL of 6 September 2005.

5. “Incentive measure” is often shortened to simply “incentive”. It should be understood, however, that even when it is shortened, it is still referring to a policy that has been implemented by some level of government.

to respond appropriately. *Non-market* incentives are more generally associated with measures that create a *shadow price* (i.e. implicit cost) of non-compliance. For example, a regulatory requirement is a non-market incentive when there is a penalty for non-compliance — irrespective of whether the penalty is monetary. *Economic incentives* can also be defined as including all market incentives and those non-market incentives that are imposed as monetary measures (i.e. they exclude incarceration and other such measures).

Economic incentives are used to improve market outcomes by changing relative prices to be more compatible with social preferences (e.g. internalizing an externality). In that sense, they are expected to encourage conservation or sustainable use of biological diversity by ensuring that non-marketed characteristics are nonetheless reflected in market prices.

**Negative incentive measures, or disincentive measures,** impose a *cost* on an activity so as to discourage its continuance. A negative incentive can be distinguished according to market-based disincentives (such as taxes or levies) and non-market-based disincentives (such as fines or other consequences). A distinguishing characteristic between a market and non-market disincentive is in how finely they can separate high-value uses from low-value ones. A market disincentive raises the price of an activity, but does not forbid it. Individuals and organisations who derive high value from that activity will continue undertaking it — albeit at a reduced level of benefits. A market disincentive, therefore, has the effect of sorting “valuable” use of a resource from “wasteful” use.

For biodiversity, disincentives would generally include measures that internalise the costs of use or damage to biological resources, in order to discourage activities that deplete biological diversity.

**Positive incentive measures** for biodiversity are monetary or non-monetary inducements to get individuals or organisations to change their behaviour toward an outcome that improves social welfare. Positive incentives can also be distinguished according to market-based and non-market based incentives, on the basis of whether they directly or indirectly change market prices. For example, monetary rewards that are tied to individual transactions are market-based positive incentives. On the other hand, a payment, or other favourable act that is given as a lump-sum — or irregularly — will constitute a positive incentive that is non-market based. For biodiversity, a positive incentive is generally one which pays for the provision of a biodiversity-related good or service whose loss or degradation would not be in the public interest (i.e. the positive incentive has a legitimate role in improving social welfare). Positive incentives may create markets where none previously existed, or correct for problems in markets that impact on biodiversity.

Positive incentives for biodiversity can be distinguished from subsidies in that a subsidy requires a financial contribution to the beneficiary; whereas a positive incentive may not necessarily take the form of a financial contribution to the beneficiary. A subsidy may also convey an economic rent to the recipient; whereas a positive incentive is just sufficient to correct for a market failure. A positive incentive can also be distinguished from an “environmental cross-compliance” measure, since the positive incentive is being used solely for correctly for market failure — it does not form part of a payment for unrelated goods or services.

**Perverse (adverse) incentive measures** are measures that *inadvertently* cause damage to biodiversity — they were put in place for other policy objectives, but have unforeseen consequences for biodiversity. They are distinguished from *externalities* since a perverse incentive is the result of an explicit policy action, whereas an externality results from a failure of the market to internalize costs imposed on others in a market transaction. Perverse incentives are the result of a government intervention failure, in the sense that the original justification for the policy failed to account for all subsequent repercussions.

A perverse incentive can also be distinguished from an “environmental cross-compliance” measure since the latter is an environmental condition placed on an already existing payment.

**Indirect incentive measures** are measures that target activities that are once-removed from a policy objective. The relationship between the activity and the policy objective occurs through a chain of events that lead to a beneficial impact on policy objective. For example, when targeting biodiversity

conservation, measures that create markets for non-timber forest products are indirect incentives for biodiversity since they promote the maintenance of forested areas in natural states. Indirect incentives can be distinguished from conditional payments (such as those made to farmers by some governments), which have direct links to multiple targets, such as biodiversity.

**Government intervention failures** are government interventions that do not correct market failures or distort price signals and markets, to the detriment of public welfare. For example, a government intervention failure may harm biodiversity without an adequate off-setting gain in other areas. This is stronger than the notion that a policy has been implemented in a manner that could be improved upon (i.e. is economically inefficient). Intervention failure is closely related to integration failure. If the policy were developed in a fully integrated manner, intervention failures would not occur in the first instance.

**Integration failure** involves a lack of capacity or an institutional structure that fails to take full account of the effects of a sectoral policy on other important public-policy goals (e.g. the effects of transport policy on biodiversity).

**Market failure** refers to the failure of the interplay of market forces to secure an environmentally correct (i.e. reflecting a society's wish) level of biodiversity conservation, due to market prices not fully reflecting the value of biodiversity to society. Sources of market failure are found in some inherent characteristics of goods and services often associated with biodiversity, such as: (1) public good (non-excludability, non-rivalry, or both); (2) externality in the production or use of the good or service; (3) imperfect information on the part of market participants regarding market conditions; and (4) non-competitive behaviour such as market control (e.g. monopolistic) by sellers or buyers.

**Externalities** include the costs or benefits which result from an activity, but which accrue to others who are not undertaking the activity, and where no mechanism is operating to impute these costs or benefits to the original actors. The existence of externalities is closely linked to the absence of markets for the goods in question. For biodiversity, an example can be seen in one person's desire to cut down trees in a biodiversity-rich forest without accounting for the impact that would have on others: the negative impact on others is *external* to the market transaction of selling the logs.

**Regulations** are legal measures that restrict, prohibit, require, monitor or enforce certain activities or methods for implementation of laws or other policy directives. While the measures may eventually have an impact on market prices, their intention in the first instance is not generally to change market prices.

**Standards** are norms established by a standard-setting body, which may be public or private. Such norms may relate to a product, a production method, a process, a testing method, or an ambient condition. In national laws, standards may have legal force. In international trade law, however, the term "standard" is reserved for voluntary instruments, not to be confused with a (technical) regulation, compliance with which is by definition mandatory.

**Subsidy** is a financial contribution by a government, or government-directed entity, that confers a benefit. The definition used by the World Trade Organization (WTO) includes government revenue that is otherwise due is foregone or not collected (e.g. a fiscal incentive such as a tax credits), but would not in most circumstances include the value of non-internalised externalities. The WTO definition also includes income or price supports. Implicit in the definition of a subsidy is the notion that a subsidy is an economic instrument purposefully used by a government to achieve an objective or objectives. Subsidies can be general or specific, and the beneficiary can be a producer, consumer or some other market actor. Subsidy is distinguished from positive incentive in that a subsidy may go beyond correcting for a market failure (e.g. compensating for the provision of a public good) and convey a rent to the recipient.

**Support or support measure** are sometimes used synonymously with subsidy or as part of the definition of subsidy, but increasingly used as a collective term to refer to measures (such as subsidies as defined by the WTO) conferred to producers or consumers through non-subsidy measures. A support measure can be broadly thought of as a government (or government-directed body's) action that confers a benefit. Support measures are government-directed, often market-distorting, interventions which decrease

the cost of producing a specific good or service; or increase the price which may be charged for that good or service. This can include, for example, transfers via elevated prices resulting from import tariffs or other border-protection measures. As with the term subsidy, implicit in the notion of a support measure is that it is an economic instrument purposefully used by government to achieve an objective or objectives. It is also distinguished from a positive incentive, although it may encompass a non-financial measure that compensates for the provision of a public goods or service. It also excludes non-internalised externalities.

**Net social benefit** is the value accruing to a community as a whole as a result of a given activity when *all* costs (i.e. including external costs) and benefits have been accounted for. It is strongly related to the definition given above of social welfare; that is, its main use is for comparative analysis. The term “net” explicitly accounts for the possibility that there may be tradeoffs between community objectives, but that the gains justify the final outcome.

**Public goods** are goods whose: (1) use by one person does not alter the availability of the good for others (i.e. they are *non-rival*); or, (2) access cannot be easily impeded (i.e. they are *non-excludable*). Such goods cannot be provided in markets at the level that a community would want because *private* incentives are at odds with social objectives. That is, since an individual can easily access or re-purchase the goods, its price in the market will be too low. For biodiversity, this means that some biodiversity-related goods and services will go to low-value uses, and thus their resources are prone to being degraded.

**Easements and covenants** for biodiversity are contractual agreements between private land users or owners on the one hand, and public or non-governmental organisations on the other, which commit the former to undertake specified conservation or sustainable use practices on the land. These agreements are voluntary and often accompanied by some financial compensation. In some countries, such easements are subject to preferable tax treatment for the owner.

**Environmental cross-compliance** is the requirement that farmers fulfill certain environmental conditions in order to receive agricultural support payments. If farmers fail to comply, they face the reduction, or complete withdrawal, of such support. Environmental cross-compliance does not necessarily justify the original payment, but may reduce the social welfare loss that it causes.

**Tradable or transferable permits or rights** are rights or allowances to undertake a certain restricted activity — such as the emission of pollutants, land development, harvesting of a particular species, etc. — which can then be traded between interested parties through a market.

**Use rights** are property rights over certain aspects of a natural resource for private uses (e.g. hunting), which do *not* include the right to sell the resource (e.g. the hunting range) or to damage the surrounding ecosystem (e.g. the game’s habitat). They may be linked to certain conditions or *covenants* ensuring the sustainability of use.

**Ecosystem services**, include all those functions of an eco-system which provide direct value to the well-being of humans, through maintenance of a healthy environment.

**Property rights** involve exclusive authority to determine how (and by whom) a particular resource will be used. A property right may be seen as a bundle of separate and distinct rights over a particular good — including at least the right of personal use, the right to demand compensation as a prerequisite for its use by others, and the right to transfer any or all of these rights to others (either permanently by sale or temporarily through some form of contractual arrangement). Property rights may be exercised by governments through their designated officials (public ownership or public property), as well as by private individuals and other sorts of non-governmental organisations (private property).

**Rent** is the amount of any payment to the owner of a factor of production (land, labour or capital) that exceeds the minimum payment that would have been necessary to motivate that owner not to transfer it to some other use or user.”