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PROCESSES AND PRODUCTION METHODS (PPMs): CONCEPTUAL FRAMEWORK AND CONSIDERATIONS ON USE OF PPM-BASED TRADE MEASURES

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ACRONYMS AND ABBREVIATIONS

CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CFC	chlorofluorocarbons
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
GATT	General Agreement on Tariffs and Trade
GSP	General System of Preferences
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
ITTA	International Tropical Timber Agreement
MEA	multilateral environmental agreement
PPM	processes and production methods
PPP	polluter pays principle
SPS	WTO Agreement on Sanitary and Phytosanitary Measures
TBT	WTO Agreement on Technical Barriers to Trade
UNCED	UN Conference on Environment and Development
UNCTAD	UN Conference on Trade and Development
UNEP	UN Environment Programme
WTO	World Trade Organization

TRADE AND TRADE-RELATED INSTRUMENTS

The following are the main types of trade and trade-related instruments discussed in this study:

Trade Bans or Restrictions -- Trade bans or restrictions may be used to limit imports of products which do not comply with an environmental process and production method (PPM) requirement specified by the importing country. A product may be totally banned from the market or only allowed to enter when it meets the domestic PPM requirement. This is the most common type of PPM-based trade instrument as it is used to address product-related PPMs (Category A). Bans or restrictions may also be placed on the exportation of products subject to the receiving country being able to comply with certain PPM requirements, such as the processing or disposal of hazardous wastes.

Trade Sanctions -- Trade sanctions in this case are bans or restrictions placed on products other than the particular product which does not comply with the environmental PPM requirement specified by the importing country. As a purely theoretical illustration, it might be proposed to restrict the import of television sets from a country which uses environmentally damaging fishing methods.

Countervailing Duties -- Countervailing duties are special duties levied on an imported product to offset subsidies granted for the manufacture, production or export of such product where the subsidised imports are causing injury to the domestic industry. Some suggest that countervailing duties might be used in response to *"implicit environmental subsidies"*, arising when a product is produced according to non-existent or low environmental requirements.

Mandatory Eco-Labels -- Mandatory eco-labels are labels or seals placed on products indicating that they were produced according to a specified environmental PPM; for foreign producers, they act as a trade restriction. Voluntary eco-labels may also demonstrate compliance with certain PPM requirements, but imports of non-complying products are not restricted. It is the manufacturer's choice whether or not to apply for certification of his product under a voluntary eco-labelling scheme.

Border Tax Adjustments -- These measures allow countries scope to ensure that internal taxes on products are, to the extent possible, trade neutral. In addition to adjustments already allowed by the General Agreement on Tariffs and Trade (GATT), there are proposals that, on the one hand, eco-taxes be refunded on exports and, on the other hand, border taxes be levied on imported products to correspond to domestic taxes on environmental PPMs, such as emissions or effluent taxes.

INTRODUCTION

The term *PPMs* refers to *processes and production methods* and is defined as the way in which products are manufactured or processed and natural resources extracted or harvested. It is recognised that PPMs can have significant environmental impacts. Negative impacts of PPMs can be of two sorts. A process or production method can affect the characteristics of a product so that the product itself may pollute or degrade the environment when it is consumed or used (product-related PPMs). Alternatively, a process or method itself can have a negative impact on the environment through, for example, the release of pollutants into the air or water during the production stage (non-product related PPMs).

Domestic PPM-related requirements are important policy tools for promoting sustainable development. Such PPM-related policy measures are aimed at preventing environmental degradation caused by production processes, for example by ensuring that the producers bear the costs of environmental damage. Consumers in many countries are increasingly seeking information on how the PPMs of the products they buy affect the environment. In most cases, PPM-related requirements set by government regulations have exclusively domestic effects and do not cause frictions with trade policy. However, concerns in particular with the impacts of certain PPMs on the environment and the wish to promote more environmentally sound activities or to avoid promoting environmentally damaging activities have led on occasion to the actual or proposed use of trade measures.

The issue of PPMs is a key, cross-cutting one in international discussions on trade and environment. Areas in which PPMs arise include the use of trade measures for environmental purposes, life-cycle approaches and their application to eco-labelling, economic instruments, and harmonisation of environmental policies and requirements. Recent trade disputes involving PPMs have had a catalytic effect on these discussions. One of the most well-known trade and environment disputes gave rise to (unadopted) findings by GATT dispute settlement panels that import restrictions pursuant to national legislation designed to impose particular techniques (i.e. PPMs) on the fishing of tuna beyond the limits of national territory in order to minimise the by-catch of dolphins were not consistent with GATT obligations.

Due to this pervasive importance, the OECD Joint Session of Trade and Environment Experts has invested considerable effort in analysing the environmental and trade implications of countries imposing PPM-related requirements on imported products. In a first stage, a ***conceptual framework on PPMs*** was developed. Appearing in ***Part I*** below, the framework classifies PPMs according to the scope of their environmental impact and analyses the possible measures for enforcing PPM-related requirements. In doing so, it focuses in particular on the impact of PPM-based trade measures on trade and trade policy. The extent to which existing trade rules and disciplines can relate to PPM-based trade measures is also reviewed, *inter alia* in connection with an examination of the GATT concept of "*like product*". This conceptual framework reflects the current status of understanding of PPM issues and may evolve and need to be revised at a later stage.

In order to test the conceptual framework, the OECD Joint Session of Trade and Environment Experts commissioned a series of case studies on actual PPM-related requirements. These were debated at the Helsinki Workshop on PPMs, held in April 1994, and reported on in the OECD publication entitled *Trade and Environment: Processes and Production Methods.*

Flowing from these first two phases of work, the Joint Session subsequently decided to undertake further analysis on five aspects related to the ***environmental motivation, feasibility, effectiveness and efficiency of, and alternatives to, the use of PPM-based trade measures,*** which is found in ***Part II*** below. A number of theoretical considerations concerning these five aspects are covered, as well as compatibility with existing multilateral trade rules.

This further analysis was discussed in the Joint Session between July 1994 and April 1995. It was agreed that these aspects should be taken into consideration in order to arrive at sound conclusions regarding the use of PPM-based trade measures. National policy-makers need to:

a) determine *inter alia* whether the application to imports of domestic PPM-related requirements and criteria is likely to be a feasible, effective and efficient means to secure given environmental goals;

b) identify the effects such measures would have on international trade;

c) establish under what circumstances it would be appropriate for governments to impose restrictions on imports based on their PPMs;

d) ascertain whether alternative measures exist; and

e) decide how unnecessary restrictions on trade could be avoided.

In the ***Annex***, a checklist is proposed for use when considering PPM-based trade measures and their alternatives. The various aspects of using PPM-based trade measures are elaborated herein solely in the context of national policy making. OECD has reached no consensus, nor even fully elaborated the ramifications of treating these aspects or considerations as rules or tests to be applied in a multilateral context.

PART I. CONCEPTUAL FRAMEWORK FOR PPM MEASURES

I. PPM requirements

Environmental policies are increasingly concerned with avoiding environmental degradation and internalising costs at all stages in the life-cycle of products. Regulations for implementing these policies may thus be directed to different stages of the life-cycle chain: production, distribution and sale, use and disposal. Depending on the circumstances, these regulations cover not only the environmental characteristics and quality of products but also the processes and production methods (PPM) used. All PPM requirements, i.e. government requirements as to the manner in which a product should be produced, apply to the production stage, before a product is placed on the market for sale. The aim of PPM requirements is to reduce or control negative, or promote positive, environmental effects.

There are two ways of formulating a PPM requirement. One singles out specific PPMs to be used mandatorily, e.g. by specifying that widgets should be produced according to one (or several) defined technologies. In contrast, the other type would leave free choice as to the PPM that will actually be used, either by prohibiting one or several PPMs which are to be avoided -- but allowing use of any other - or by specifying the emission or performance effects which are meant to be avoided or achieved. Differing formulations of PPM requirements may have different policy impacts, in particular concerning the potential effects on trade, the cost effectiveness of such requirements or the latitude they allow for technological innovation.

When initially imposed, PPM requirements tend to compel producers to modify their way of operating. Such modifications raise technical and financial questions, which can be more or less difficult for individual producers to overcome particularly for small producers or less developed countries. Depending upon the circumstances, PPM requirements may prompt shifts in the location of production, in its level and in the cost of the goods produced. Changes in production patterns may result in changes in trade patterns. But PPM requirements may also have a more direct connection with trade, when trade instruments are specified to support their implementation.

There are different instruments for implementing PPM requirements. Examples include regulations, labels and environmental taxes. Direct regulation has dominated environmental policy in industrial countries but there has recently emerged a broad consensus that economic instruments or a combination of both may be more efficient in many cases. Once a government recognises that an environmental problem exists and merits action to control the production process, choices must be made from a variety of available instruments to implement that decision. Such options vary according to the case but can be broadly categorised as:

i) direct regulation (command and control);

ii) market-based interventions or economic instruments -- e.g. assignment of pollution rights, fiscal measures -- pollution charges, taxes or subsidies -- or attempts to influence production patterns through consumer choice[1]; and/or

iii) voluntary schemes by industry -- voluntary agreements or codes for regulating PPMs or internalisation of environmental costs pertaining to PPMs adopted by industry, nationally or internationally.

PPM measures may be used to influence the adoption of a PPM requirement by another country, for instance when these measures are applied to imported products not conforming to specified PPM requirements (i.e. PPM requirements applied to imports). Such action has obvious trade implications for other trade partners. Taking the example of the PPM requirement that CFCs not be used in the manufacturing process, a hypothetical import prohibition on computer chips using CFCs as a cleaning solvent would be a trade measure to extend a PPM requirement to other producers. For the purpose of our present discussion, the focus will be on PPM measures and requirements which have trade effects. Such measures may include regulatory, economic or voluntary instruments based on PPM requirements such as:

i) import or export restrictions of products not conforming to certain PPM-requirements;

ii) environmental labelling schemes; and

iii) environmental taxes, border tax adjustments and countervailing duties.

The following policy approaches are also relevant to further the implementation of PPM requirements:

i) harmonisation of PPM requirements and mutual recognition; and

ii) positive incentives for technology transfer or other means concerning capacity building to support developing countries' efforts to implement PPM requirements, particularly financial and technological assistance.

II. Production and consumption externalities

When the production, consumption or disposal of goods creates damage to the environment that is not incorporated into the cost, there is an "external diseconomy" or "externality". When this externality spills over to other countries, it becomes a regional or global externality. A starting point for analytical purposes is to distinguish between PPM requirements that address consumption externalities and those that address production externalities, i.e. to identify whether the environmental effects addressed by the PPM requirements in question manifest themselves during consumption or production activities.

Environmental requirements which address *consumption* externalities are concerned with environmental effects which manifest themselves during the "downstream" stages of the life-cycle, *i.e*. at the distribution/marketing stage or when goods are consumed and disposed of after consumption. Such requirements affect product characteristics and could concern the physical or chemical properties of a product, the avoidance of health and sanitary risks, the improvement of consumer information, limitations on the environmental hazards of transportation, mandatory types of packaging and containers, waste disposal, retrieval and recycling of the products or their packaging. Although environmental consumption

externalities are usually addressed through product requirements, PPM requirements may be appropriate when governments seek to regulate processes which influence the environmental effects of a product when it is consumed. These latter requirements may thus be referred to as *product-related PPM requirements*.

Environmental requirements addressing *production* externalities frequently take the form of restrictions on input use or requirements that certain technologies be adopted at the "upstream" stage of a product life-cycle, i.e. at the time of cultivation, raising and slaughtering of animals, exploitation of natural resources, extraction of raw materials and production or manufacturing of goods. They do not affect the product characteristics and may be referred to as *non-product-related PPM requirements*. They specify:

i) how to control the environmental pollution effects of production, such as air, water pollution or soil degradation. This may include emission controls which set maximum pollution levels by plant or region; performance requirements which specify pollutant releases per unit of output from a given plant; technology requirements which determine the technology to be used in the production process (e.g. introduction of cultivation methods that conserve the soil or avoid use or abuse of fertilisers, the regulation of animal husbandry that creates pollution, use of CFCs or certain solvents in the manufacturing process); or

ii) the methods to be used to produce goods or the methods of resource management other than the above. Examples include management for forest conservation; methods for catching fish or conserving certain species; provisions connected with animal welfare related to raising or slaughtering.

The distinction between product and non-product related PPM requirements is important from the viewpoint of trade effects and GATT treatment. GATT recognises the legitimacy of import restrictions to enforce product requirements and developed, during the Tokyo Round, the Technical Barriers to Trade (TBT) or Standards Code in an attempt to ensure that such requirements do not operate as unwarranted trade restrictions [2]. In the Uruguay Round revision of the TBT code, known as the Agreement on Technical Barriers to Trade, the scope of product requirements covered was extended to include “product characteristics or their related processes and production methods”. In other words, PPM requirements would be covered by the TBT Agreement and the new Agreement on Sanitary and Phytosanitary Measures (SPS) but only inasmuch as they affect the characteristics of a product and thus aim to avoid consumption externalities[3].

PPM requirements without such effects, i.e. non-product-related PPM requirements, would remain outside the Agreement’s scope. Moreover the revised TBT Agreement would not cover PPM measures other than technical regulations and standards, *e.g.* it would not cover economic instruments. The SPS Agreement addresses a wide variety of measures which governments use in order to ensure that human and animal food is safe with respect to contaminants, toxins, disease-causing organisms and additives, and measures to protect human health from pest or diseases carried by plants and animals as well as measures to protect the life and health of plants and animals.

III. An analytical framework

The two main types of environmental externalities addressed by PPM requirements provide a useful basis for pursuing an analysis of the trade-related issues arising from environmental PPM requirements and measures. A further distinction important for production externalities is the jurisdictional scope of the environmental damage caused by a PPM, indicating the degree to which the

environmental problem is shared by other countries or affects shared resources[4]. In light of these considerations, PPMs may be distinguished analytically according to whether their environmental impact is (see Table 1):

Category A -- transmitted by traded products (in this case, the PPM has an effect on the characteristics of the product and PPM requirements address consumption externalities);

Category B -- not transmitted by traded products (in this case, the PPM has no discernible effect on the characteristics of the product and PPM requirements address production externalities). The environmental impact here may be:

-- Transboundary or global

B-1: Transboundary pollution;

B-2: Migratory species and shared living resources;

B-3: Global concerns;

-- Solely within the country of origin

B-4: Environmental and other effects limited to the territory of the country applying the PPM.

A. Category A: product-related PPMs

In this category of PPMs, environmental damage is caused by the product itself or by substances physically incorporated into it. Potential environmental effects under this category include impacts on air, water and land quality; species conservation and protection; or plant health in the importing country. The increasing interest in the environmental impact of products has focused attention on the different stages of the life-cycle, particularly downstream impacts (waste management, recycling, re-use). In some cases, the way a product is produced can affect its final characteristics and cause harm to the environment of, or to the safety or health of human, animal or plant life in, the importing country. The importing country usually tries to ensure that consumption externalities are internalised through environmental regulations, environmental labelling or other policy instruments. Examples are criteria on chemical or heat treatment of timber, use of pesticides in agriculture and use of ozone-depleting substances.

The PPM requirements under this category are generally applied to imported products (e.g. through import restrictions applied to products not conforming to certain PPM requirements), since it would not be possible to protect the domestic environment if foreign products were treated differently from domestic products. Here, the importation of the product is regulated or restricted because it may "pollute" in consumption or with regard to its disposal. Import restrictions based on PPMs have been used in several international agreements to protect the environment of the contracting parties from harmful organisms or products, as well as under national measures intended to ensure food and agricultural safety by regulating the conditions of food production[5].

Table 1. Conceptual framework

(based on a classification of PPMs according to their environmental effect)

	Category A	Category B			
		B-1	B-2	B-3	B-4
Environmental externality	**Consumption externality***	**Production externality****			
PPM requirement	Product-related: - PPM which affects product characteristics - TBT and SPS Agreements cover this category	Non-product related: - PPM which does not affect product characteristics - Outside the scope of TBT and SPS			
Environmental effect	National***	Transboundary pollution	Migratory species and shared living resources	Global concerns	National
	Imported products pollute or affect domestic human and animal health and the environment. (e.g. plant pests, hazardous wastes and chemicals, pine nematode infested timber)	The environmental effect is transmitted to other jurisdictions or areas beyond national jurisdiction (e.g. transmitted air, water or land pollution)	The environmental effect involves more than one jurisdiction or areas beyond national jurisdiction. (e.g. conservation and management of migratory animals, birds and fish and other shared living resources)	The environmental effect has global consequences (e.g. depletion of the ozone layer, climate change, harm to biodiversity, effects on threatened or endangered species)	The environmental effect is limited to the country using the PPM.
Harmonisation of PPM requirement	National -International requirements are desirable. Countries may deviate, under certain conditions, from such requirements. Transboundary and global -Harmonisation is desirable to the extent possible.	Transboundary and global -Harmonisation could be relevant.			National -Harmonisation is highly problematic and may be undesirable.
Trade policy aspects **- Trade restrictive measures**	-The trade-restrictive measures would represent enforcement of national product requirements. -GATT rules require equal (non-discriminatory) treatment and transparency.	-Trade measures designed to impose PPM requirements used in importing country on exporting country may have extra-jurisdictional effects. -Multilateral environmental agreements may identify trade measures as an appropriate tool under certain circumstances.			A country can take the primary responsibility for setting any PPM requirement within its jurisdiction through non-trade policy measures
- Like-product issue	Product differentiation based on product requirements is allowed within multilateral trading rules.	Objective methods for product differentiation based on criteria which are not physically embodied in the products have yet to be developed. Method might include examination of whether implemented or proposed measures/requirements are transparent, predictable, feasible or are disguised restrictions on trade.			

* *Consumption externality: environmental impact is transmitted by traded products*

** *Production externality: environmental impact is not transmitted by traded products*

*** *This may sometimes link to transboundary or global environmental issues*

As a policy approach, harmonisation or mutual recognition of product-related PPM requirements could be desirable, since various sets of PPMs applied by different countries lead to segmentation of markets and may pose problems to international trade and competitiveness. However it is recognised that individual countries may prefer having their own requirements on the ground of differing environmental endowments, preferences and conditions; thus, countries may deviate under certain conditions from international requirements[6]. The World Trade Organization (WTO) TBT Agreement provides some general internationally agreed rules on how to regulate PPMs falling into this category while minimising negative trade effects[7].

In case a traded product has consumption externalities, it is recognised that nations have the sovereign right to regulate on their own territories, and within multilateral trading rules, the PPMs which they believe have detrimental environmental effects. If imports were exempted, this would make it difficult or even impossible to enforce domestic regulations. The question then is how to ensure that measures avoid or minimise unnecessary trade distortions. Even when there are no direct trade restrictions, product-related requirements may effectively impact on trade by imposing additional costs on producers.

Although multilateral trading rules allow regulations and bans on a product which is causing environmental problems in the importing country and which does not fulfil national product requirements, the introduction of new PPM requirements which preclude the importation of non-conforming goods might nevertheless raise concerns with exporting countries. Experience has shown that countries affected, particularly when they apply different domestic requirements, raise issues such as the scientific basis for the PPM requirements and the priority of scientific evaluation over political choices or whether it is justified to apply the precautionary principle in the evaluation process[8]. Mutual recognition of certification systems can be helpful, but this may require prior international agreement on testing and certification procedures or criteria for labels. Moreover, in certain cases product characteristics related to a specific PPM cannot be easily verified through product inspection or would require highly sophisticated testing procedures[9]. Such product may need to be accompanied by a certificate indicating what process was used. In practice, the responsibility for certifying that a specific process was used at the production stage is usually shifted to the exporting country.

With regard to the issue of "*like products*", the multilateral trading system presently requires equal treatment of all like products; on the other hand, differing treatment may be accorded to dissimilar products. The notion of like products is of paramount importance to the GATT system, and supports the principle of non-discrimination in the conditions for the treatment applied to imports. The GATT gives no definition of "*like products*" and its interpretations are based on a case-by-case approach, which takes into account the objective of the measures. Some criteria suggested are:

- the product's properties, nature and quality;
- the varying nature of inputs of a product (e.g. whether it has a vegetable, animal or synthetic origin); and
- the product's end uses in a given market and consumers' tastes and habits (which change from country to country).

For instance, the panel report on the US measure affecting alcohol and malt beverages indicates that the like product determination be made not only in the light of the physical characteristics, but also in the light of the purpose of Article III (national treatment on internal taxation and regulation) of the GATT (i.e. although the characteristics of both low alcohol beer and high alcohol beer are physically the same, they

should not be considered as like products because the essential purpose behind their difference is to protect human health).

The WTO TBT Agreement covers PPMs which affect the characteristics of a product. Under such internationally agreed rules, discrimination between imported products would be allowed in the case of product-related PPM requirements. It is however specified that such PPM requirements should not be more trade restrictive than necessary to fulfil legitimate environmental or health and safety objectives. Efforts have been made in GATT (and in other specialised institutions such as the International Organisation for Standardisation (ISO), the International Electrotechnical Commission (IEC), or the FAO/WHO Joint Codex Alimentarius Commission) to foster greater mutual understanding and agreement among countries on rules and procedures to set product-related PPM requirements at the domestic level, to increase transparency of these procedures, to harmonise the requirements wherever feasible, and, generally, to allow for consultations on issues of common concern.

B. Category B: non-product-related PPMs

In this category of PPMs, environmental damage is caused by the way a product is produced and not by the product itself. In other words, the problem is caused by production externalities. The types of environmental effects under this category include:

B-1) Transboundary pollution (environmental effects in a physically adjacent country or in a shared geographical region)

-- pollution which affects air, water or land

-- processes affecting natural habitats or resources

B-2) Effects on the conservation and management of transboundary living resources (the environmental effect involves more than one jurisdiction or involves areas beyond the jurisdiction of countries involved)

-- depletion of living resources (migratory species and other shared living resources)

B-3) Global concerns (environmental effects to global commons or to environmental resources which are shared by all countries)

-- depletion of ozone layer, climate change

-- harm to biodiversity

-- effects on threatened or endangered species[10]

B-4) Environmental and other effects limited to the territory of the country using the PPM

-- pollution which affects air, water or land

-- processes affecting natural habitats or resources

-- use of resources (resource depletion)

-- animal welfare

It must be noted that there may be cases under Categories B-1, B-2 or B-3 where the production process is situated in an area which is under no national jurisdiction (e.g. high seas) or where the relevant governmental authority lacks the means or the will to enforce them. The solutions may be similar to issues involving production externalities with spill-over effects.

In cases where production externalities have a spill-over effect beyond national borders, conflicts may arise in addressing an environmental problem when distinct sovereignties have differing interests in an environmental problem, or when the policy stance of one government is seen by public opinion in another country as inimical to the preservation of the transboundary or global environment. The problem is how to agree on a suitable sharing among the parties concerned of the required internalisation of externalities. One single authority cannot decide for all responsible parties. International arrangements or undertakings are a means, whenever they can be achieved, to engender co-operative behaviour among sovereignties (including harmonisation of PPM requirements). The issue is how affected countries can work together towards better environmental protection and resource management (including the evaluation of environmental costs and cost-sharing) on issues which transcend their own national borders.

With regard to multilateral environmental agreements (MEAs), PPM measures, including trade measures, may be implemented under different circumstances:

i) cases in which a country is obliged to take measures by virtue of the MEA;

ii) cases in which an MEA authorises the country to take measures;

iii) cases in which the measure taken is argued by the country taking the measure to be necessary to achieve the objective of an MEA (MEA-related measures);

iv) cases in which the measure is taken in the absence of an MEA with reference to general principles of international law, such as the principle of state responsibility for transboundary environmental harm, as recognised in customary international law (see below).

One of the issues pertaining to MEAs is how to deal with non-parties to an MEA who can frustrate achievement of MEA objectives. For instance, if key producer or consumer nations do not participate in an MEA, their activities alone can undermine the agreement. Shift in production to non-parties could vitiate all environmental gains made through implementation of the agreement by parties. There may be some reasons why a country might decide not to join an MEA such as differing environmental endowments and policy priorities, compliance cost or ability and lack of scientific evidence persuasion. In considering the relevant developing countries concerns, it will generally seem preferable to secure their co-operation through technology transfers, financial assistance or flexible provisions for the implementation of the MEAs rather than resorting to trade measures.

Another important issue is how to address urgent problems that can cause serious environmental degradation when an international agreement cannot be reached. In such a situation, there will be increased pressure for countries to take national/autonomous measures to protect the environment, although in practice, unilateral actions have been extremely rare. When the PPM causing environmental damage operates outside an affected county's national jurisdiction, policy action by the affected country to change the PPM has been seen to be extra-jurisdictional. It must be noted that such PPM may also affect the country of origin. Non-trade, alternative measures should be fully considered.

The harmonisation of non-product-related PPM requirements is highly problematic and may be undesirable where the PPMs in question have no transboundary or global environmental effects. While strict non-product-related PPM requirements may have positive benefits for sustainable development by removing some of the hidden costs of environmentally unsound practices, demands for harmonisation of non-product-related requirements may be difficult to justify because it is generally accepted that a county's solution to domestic environmental problems should be based on its own policy decisions and evaluations, reflecting its own economic conditions and social preferences. Harmonisation of non-product-related PPM requirements may even be undesirable to the extent that it masks comparative advantage[11]. It is indeed widely accepted that differentiation of the requirements across countries may be justified as stated in the principle 11 of the Rio Declaration:

> *"States shall enact effective environmental legislation. Environmental standards, management objectives and priorities should reflect the environmental and development context to which they apply. Standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries".*

On the other hand, when there are transboundary or global environmental effects, harmonisation or mutual recognition of PPM requirements could have greater relevance. Nevertheless, the question arises of who has the right to decide the legitimacy of PPM requirements, and on what criteria or basis. Namely what degree of international agreement is needed and how to take account of differing factors among countries (including the significant cost burdens for developing countries). As already mentioned, the TBT Agreement does not cover PPMs in this category. Another relevant question is connected with the effects of different PPM requirements on competitiveness and the kind of policy measures which could address this issue. In particular, whether it should be permissible to use subsidies, countervailing duties or other measures to address such competitiveness concerns and whether certain competitiveness concerns could be considered legitimate for taking trade measures or merely a guise for protectionist objectives [12].

Category B-1 -- PPMs and transboundary pollution

PPM requirements to address transboundary pollution may take the form of restrictions on input use or general performance requirements, e.g. concerning extraction of raw materials or production of goods, involving the use of chemicals or pesticides, soil degradation, air (acid rain) or water pollution (river and coastal zone pollution resulting from factory or agricultural discharges), etc.

In line with the concept of the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction (Principle 2 of the Rio Declaration), affected countries could ask the country where the environmental damage originates to regulate such impact through an environmental regulation in its own jurisdiction. Direct control or regulation of the PPMs may be achieved through regional co-operation among countries concerned (e.g. agreed requirements such as emission requirements which set a maximum level of pollution release, by plant, industry or region, or performance requirements which specify pollution release per unit of output from a given plant). PPM requirements that are performance-based may be more efficient in achieving the desired environmental effects, while allowing for better eventual trade effects to be taken into consideration.

However, it is sometimes difficult to agree on adequate action at the source and cost sharing among countries concerned (particularly on the compensation of the abatement costs of the polluted country) because of differences in assessments on environmental impacts, endowments or costs or policy

preferences. There may sometimes be a lack of agreement on the existence of the problem for which one country sets a PPM requirement. The polluting country may have internalised a part of the environmental cost based on national cost-benefit analyses without taking into account extraterritorial environmental costs. Failure to agree on this cost sharing or to regulate the environmental impact by the polluting country may create pressure to adopt unilateral trade measures to curtail environmental impacts by reducing demand for the environmentally damaging products or as a sanction (e.g. import restrictions on the polluting product if a traded product exists) by affected countries to try to shift the costs of internalisation to the exporter. In practice, no trade actions have ever been taken with regard to transboundary pollution.

Category B-2 -- PPMs and transboundary living resources

Transboundary living resources are resources within the jurisdiction of more than one country. These are species which may move back and forth from the jurisdiction of one country to that of another, or outside any national jurisdiction, as well as species whose habitat is shared between several countries. Due to their shared nature, international co-operation on conservation and management is often required[13]. Countries have a long history of entering into international agreements containing PPM-based measures/requirements or trade provisions, and implementing national import and export restrictions, in order to safeguard transboundary living resources. The international agreements concerned have sometimes been negotiated by a limited number of countries concerned with the conservation of resources or species (e.g. the tripartite Southern Bluefin Tuna Agreement). However, substantial multilateral regimes affecting transboundary living resources have also been developed in some cases (e.g. the provisions of the Law of the Sea Convention dealing with migratory species of fish).

The trade restrictions prescribed are mostly product derived -- it is not permitted to import and/or export the species or products extracted from these species. Some of these agreements have included trade provisions based on non-product related PPM requirements as part of their management regimes. In all of these agreements, the actions of non-parties can easily undermine the objective and implementation of the agreements (e.g. resource allocations). More analysis is required as to why some living resource agreements may succeed in their goals without the use of PPM-based trade provisions.

In the framework of co-operative approaches, it may be recognised that a variety of situations exist, ranging from PPM requirements addressing the conservation and management of transboundary living resources in accordance with internationally agreed criteria, to PPM requirements related rather to ethical, value or cultural preferences or concerns. It is often difficult to draw a clear line between PPM requirements which will need co-operative actions or an international agreement to achieve their environmental objective (e.g. conservation and management of transboundary living resources) and those based more on ethical, value or cultural preferences or concerns which may not be shared by those affected particularly when there is no common definition of the problem and of remedial actions. The question of what is a "value" and what definition is given to "environment" may be subject to divergent views. Conflicts may arise in particular when a country wishes to make its PPM requirements, which are not shared by the other concerned countries, the benchmark for universal application.

Category B-3 -- PPMs and global environmental concerns

The crucial point here is that effective management of the environmental issue requires action shared by all (or at least a significant number) of countries. Remedial actions can be frustrated if a country which has an important role to play in the solution of the problem does not act at all, or acts in an

insufficient way. Action by like-minded countries is generally decided and distributed through an international agreement. One point to be considered in this regard is whether third parties which share responsibility in the environmental damage but do not participate in the agreement should be treated in the same way as the parties to the agreement. Such PPM measures can be applied on a non-discriminatory or a discriminatory basis.

For instance, the Montreal Protocol sought to address this issue through incentives and trade measures with a mix of product-based and non-product-based restrictions. This includes provisions on both the prohibition of trade in CFC-containing products with non-signatories, and examination of the feasibility of banning or restricting the import of products produced with controlled CFC substances, although the final product does not contain any CFC elements. This second approach has been rejected for the moment. It could be argued that different treatment was justified by the need to prevent production of controlled substances migrating from signatories to non-signatories, thus frustrating the environmental objective of the Montreal Protocol. The objective for imposing trade restrictions was to try curtailing environmental impacts on areas outside signatory territories. It appears that the issue at stake here was not only that non-signatories would derive benefits from actions undertaken by signatories to MEAs, but that the actions undertaken by the signatories to an MEA to tackle a global problem could be nullified by actions of non-signatories. In more practical terms, the question raised is the possibility to use discriminatory measures against non-parties to obtain acceptance of the MEA or to extend specific PPM requirements to non-parties.

Category B-4 -- PPMs and local environmental concerns

2. In the case of Category B-4, it is the responsibility of the affected country to apply a proper solution in line with the Principle 2 of the Rio Declaration. It may seek to internalise such externality through a regulation or an economic instrument, i.e. the primary responsibility for setting any PPM requirement would lie with the country where that production process takes place. Examples of PPM requirements are similar to those in category B-1, including emission requirements during the production stage, performance requirements which specify pollution releases per unit of output from a given plant and ambient requirements which determine the permitted concentration of pollutants in a given medium (air, water, soil). They also include health, safety and cleanliness or technology requirements to be adopted when manufacturing a product. The fact that there are no spill-over environmental effects does not preclude that some countries would wish to see their PPM requirements adopted by other countries, either because competitiveness issues are raised or because of the broader feeling that this is the "right" policy to be pursued (e.g. animal welfare).

IV. Non-product-related PPMs and trade

With respect to PPMs in Category B (non-product-related PPMs), the main problem from a trade policy point of view arises when an importing country -- with or without corresponding production facilities -- wishes to subject imported goods to PPM measures referring to a production process taking place in the country of origin. This would shift part or all of the economic impact of this measure to non-nationals and could be seen as extra-jurisdictional application of the importing country's law unless there are international agreements among countries concerned. Conflicts may arise when such PPM measures have been introduced without prior consultation and/or mutual agreement and, more particularly, when they relate to moral values, ethical or cultural preferences or environmental choices which lack scientific basis.

When the production externality in question has transboundary, global or regional spill-over effects (Categories B-1, B-2, B-3), one option is to take the decision to implement a specific PPM requirement on the basis of a prior agreement between the countries concerned on the way to deal with the environmental problem. This may imply a bilateral, plurilateral or global agreement. The important point here is the existence of a sufficiently broad consensus among concerned parties on environmental objectives and the means to achieve them. Some MEAs identify trade measures as an appropriate tool, and sometimes, as the preferred tool to ensure implementation of environmental objectives under certain conditions. The relation of trade restrictive measures taken in the framework of MEAs to GATT rules is on the work programme of the WTO Committee on Trade and Environment and was examined in the GATT Working Group on Environmental Measures and International Trade.

Another point to be considered in this regard is the discriminatory application of trade measures to non-signatories as mentioned above. The Montreal Protocol is the only MEA which has examined the feasibility of banning or restricting from countries not party to the protocol the import of products produced with but not containing, controlled substances. It should be noted that the parties to the protocol recently took the view that it was not feasible to impose a ban or restriction on imports at this stage. An equally important question for further analysis is the feasibility and effectiveness of MEAs introducing PPM measures, in particular, with respect to non-parties and on the conditions for applying differential treatment to non-parties (this may also include the necessity and efficiency of such measures and consideration for providing technical assistance or longer transition periods in order to facilitate the phasing in of developing countries). Similarly, further analysis is called for on how to deal with the situation when international co-operation concerning PPM requirements or certification system cannot be achieved, a situation which may lead to unilateral trade restrictions and also lead to problems on initiating, implementing and enforcing MEAs.

In the case of localised environmental problems (Category B-4), countries can set PPM requirements applicable to production in their territory and implement it through non-trade policy measures. As mentioned above, the public in some countries may feel that foreign countries are wrong not to treat their environment with the same care. Such value judgements are sometimes given an additional strength by the opinion that differences in environmental policies create "unfair" competition to domestic industry. In cases where the production externality has no spill-over effects, present trading rules do not allow one country to use trade measures for the purpose of unilaterally enforcing its own environmental preferences or requirements on other countries -- the reason being that the potential for protectionist abuse would be very great since the enforcing country assumes only part or none of the economic cost to be borne for the implementation of this requirement. This raises an issue already mentioned at different points of this analytical framework, viz. *to what extent and by what means should national PPM requirements be applied to products produced beyond the country's jurisdiction*?

The issue of "like product"

Current trading rules do not contain specific provisions for making a distinction between traded products based on criteria which are not physically embodied in the products (with the exception of GATT Article XX(e) on the products of prison labour). Attempts to classify traded goods according to criteria and requirements not physically embodied (i.e. the PPM requirements addressing production externalities) raise trade policy issues, while making a distinction between physically similar products according to different PPMs is sometimes considered important from an environmental viewpoint.

Simple inspection of a product will not show whether a specific PPM (which has a production externality) has been used in its manufacturing. The feasibility of differentiating physically similar

products may depend to some extent on the availability and practicability of testing techniques. The product would in most cases need to be accompanied by a certificate indicating what process was used. Another concern relates to the lack so far of international harmonisation among the national standards applied to production methods, processes, handling and disposal techniques, etc. Variations in PPM requirements and difficulties in verifying internationally their compliance contribute to uncertainty as regards the treatment of exports in foreign markets. They also create concern that any new classifications of products according to PPM characteristics would modify the balance of concessions negotiated earlier.

More generally, PPM measures under Category B may introduce distortions into international trade, stemming from the greater market segmentation (if the PPM requirements of different countries are incompatible with each other) and from the more difficult and complex administrative import procedures that will be needed to verify compliance with such PPM requirements. Both factors may increase uncertainty and costs for traders. It is also possible that protectionist motives could underlie the use of standards and product differentiation. Whether and under what conditions a differentiation between physically or functionally similar products bearing no consumption externalities could be allowed would therefore merit a very careful examination.

PART II. CONSIDERATIONS ON THE MOTIVATION, FEASIBILITY, EFFECTIVENESS AND EFFICIENCY IN THE USE OF PPM-BASED TRADE MEASURES, AND ALTERNATIVES THERETO

I. Motivation

A. Type of motivation

In considering the use of PPM-based trade measures, or possible alternatives, a thorough understanding is needed of the motivations behind these measures. Such an understanding is an important prerequisite for a successful integration of trade and environment at the policy-making stage.

A wide range of motivations has been invoked for applying PPM measures. In many cases, these motivations are multiple. However, perceptions concerning them may vary and these different motivations are not always transparent and distinguishable. Although they are sometimes inter-related, three main types of motivations for using PPM-based trade measures can be identified: 1) environmental, 2) competitiveness and 3) value-based.

1. Environmental motivations

a) Geographic scope[14]

Environmental motivations for using PPM-based trade measures can be divided into three broad categories depending on the geographic scope they aim to protect: 1) the domestic environment (of the importing country), 2) shared environments (of both importing and exporting countries, i.e. transboundary and global environments), or 3) a foreign environment (of an exporting country).

Domestic Environment*:* PPM-based trade measures can be motivated by the desire to protect a country's domestic environment from the harm which might be caused by an imported product (falling under Category A in the conceptual framework definition). To this end, governments set standards for products and require imported goods to meet the same standards as domestically-produced goods in order to prevent *consumption externalities*. In some cases, product standards may relate to the way a product is produced, when such a PPM may lead to harm in the importing country. Examples include criteria on chemical products and, in the area of food health and safety, rules for food irradiation, hygienic practices, or pesticide use. An environmental example is the requirement that imported timber be heat-treated to destroy harmful pests such as pine nematodes. As the case study on recycled content presented at the Helsinki Workshop shows, it is important to look at both: 1) whether the PPM affects product characteristics and 2) the type of environmental externality. Although recycled content mandates may appear as product-related PPM requirements, they may be addressed to both production and consumption externalities. For example, they might be intended to encourage recycling in the producing markets by using retrieved materials for production, and in consuming markets by collecting used products/materials.

Table 2. Analysis of PPM-based trade measures
(motivation, feasibility, effectivenes, efficiency and alternatives)

	CATEGORY A: **PPMs whose environmental impact is transmitted by traded products**	**CATEGORY B:** **PPMs whose environmental impact is not transmitted by traded products**			
		B-1 **Transboundary pollution***	**B-2** **Migratory species and shared living resources**	**B-3** **Global concerns**	**B-4** **Environmental and other effects limited to the territory of the country applying the PPM requirements**
Motivation**	-Environmental: protection of domestic environment -Health considerations -Competitiveness	-Environmental -Competitiveness	-Environmental -Value-based	-Environmental -Competitiveness	- Environmental and value-based motivations often closely interconnected - Competitiveness
Feasibility Consideration should be given to technical, economic and legal feasibility of differentiating products on PPM requirements	Product differentiation based on physical characteristics is allowed within multi-lateral trading rules	Objective methods for product differentiation based on characteristics that are not embodied in the products are difficult technically and economically. Differentiation should not result in trade protection. Such methods have not yet been developed. Certification is necessary.			
Effectiveness	PPM-based trade measures can be needed for the effective enforcement of national product requirements	PPM-based trade measures not effective: trade is not a root cause of the environmental damage	-MEAs particularly effective for these categories -PPM-based trade measures effective when trade itself impedes the agreement's effectiveness in achieving the environmental goal (e.g. CITES, Montreal Protocol)		From an environmental point of view, PPM-based trade measures are not required
Efficiency The relative efficiency of the PPM-based measures will depend on the costs of their use compared with the costs of other policy options considered to be equally feasible and effective	GATT rules require transparency and non-discriminatory treatment	No trade related measures of this type have been used or proposed	-Trade measures implemented to impose domestic PPM requirements on another country may have extra-jurisdictional effects -MEAs may identify trade measures as an appropriate tool under certain circumstances -The treatment of non-parties of an MEA is an issue to be examined further with respect to achieving the objectives of the MEA		A country can take the primary responsibility for setting any PPM requirements within its jurisdiction through non-trade policy measures. Trade measures are difficult to justify to address competitiveness concerns

Table 2. (Cont'd.)

	CATEGORY A: PPMs whose environmental impact is transmitted by traded products	CATEGORY B: PPMs whose environmental impact is not transmitted by traded products			
		B-1 Transboundary pollution*	**B-2 Migratory species and shared living resources**	**B-3 Global concerns**	**B-4 Environmental and other effects limited to the territory of the country applying the PPM requirements**
Alternatives - should be explored in light of the possible drawbacks of PPM-based trade measures under the feasibility, effectiveness and efficiency criteria - Could include harmonisation/mutual recognition of PPMs, economic instruments, financial and technical assistance, labelling, trade incentives and reliance on domestic measures	- Harmonisation is desirable to the extent possible - Countries may deviate, under certain conditions, from international requirements	-Harmonisation or mutual recognition could be relevant			- Harmonisation is highly problematic and may be undesirable
	- Economic instruments - Labelling - Financial and technical assistance - Environmental trade preferences	- Assist through clean-up funds or technology for the prevention of environmental damage at source - Liability and compensation mechanism ***	- Certification and labelling (giving due consideration to foreign country circumstances and interests)	- Financial and technical assistance - Economic instruments - Labelling	- Financial and technical assistance - Voluntary eco-labels - Phased-in regulations - Environmental subsidies - Environmental trade preferences

* *There is no experience with PPM-based trade measures in this category.*

** *Differing approach as to risk acceptance or environmental precaution may lead to differing perceptions of motivation.*

*** *See Principles 2 and 13 of the Rio Declaration.*

As countries move towards "sustainable consumption patterns", this type of product design mandate may become more frequent and the trade implications need to be further explored.

Shared Environments: PPM-based trade measures may be motivated by the desire to protect shared environments, where *production externalities* spill over from one country to other countries (Categories B-1, B-2 and B-3). Here, countries may wish to see the PPMs used by other countries changed because these are causing environmental harm to resources partially under their jurisdiction (e.g. transboundary pollution or migratory species) or to global ecological assets shared by all countries (e.g. the ozone layer, endangered species, biodiversity). The case studies presented at the Helsinki Workshop indicate that such PPM-based trade measures are generally motivated by the desire to strengthen the implementation or enforcement of regional and MEAs that have adopted PPM-based requirements.

Although numerous agreements exist to address transboundary and global environmental concerns, they are sometimes difficult to negotiate, implement and enforce. Countries have varied reasons for not entering into environmental agreements, including disagreements over the existence or severity of the environmental threat and the efficiency and equity of the regulatory regime selected for addressing the threat. There may also sometimes be a short-term economic advantage from non-participation and non-compliance. Environmental agreements thus may be undermined by non-parties and violated by parties. For example, fisheries agreements are often undermined by pirate fishing vessels, by the reflagging of vessels from parties to non-parties or by the failure of flag states to permit boarding and inspection or to prosecute vessels adequately.

Although PPM-based trade measures are not widely used in environmental agreements, they have on occasion been proposed or used as a tool for strengthening environmental agreements, particularly where the threat to shared ecological resources may be severe and immediate. Such use can be developed within the scope of MEAs. The use of trade instruments has also been proposed unilaterally.

At the multilateral level, PPM-based trade measures have been included as part of the regime of an environmental agreement to encourage full participation (e.g. the Montreal Protocol). They have been threatened as a means to ensure comprehensive adherence to agreements (e.g. sanctions on countries engaging in driftnet fishing in violation of UN Resolutions and the Wellington Convention). They have been used to broaden the scope of international agreements and increase their effectiveness (e.g. the Wild Bird Conservation Act enacted in the USA with respect to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). They have been proposed as an incentive to action within an international agreement and to prompt development of MEAs (e.g. bans on unsustainable timber imports with respect to the International Tropical Timber Agreement (ITTA)). On the other hand, there are hundreds of environmental agreements, addressing concerns from ocean pollution to eco-system management, whose goal is to harmonise PPMs, taking into account the differing environmental responsibilities, capacities and preferences of the Parties; most of them do not contain trade provisions nor have they raised trade issues.

Unilateral trade restrictions aimed at changing the environmental policies of other countries can lend themselves to protectionist abuse. By interfering with countries' ability to exercise their rights to set their own environmental policies for production processes within their jurisdiction, and imposing conditions of market access, they can provoke conflict among trade partners. There are concerns that such measures may not be appropriate to the environmental conditions in the exporting country. Fears have also been expressed that countries with greater market power will inappropriately or unfairly pressure countries with lesser power to change their environmental policies and practices within their jurisdiction as a condition of market access. As stated in the Agenda 21 of the UN Conference on Environment and

Development (UNCED) and Principle 12 of the Rio Declaration, unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures to address transboundary and global problems should as far as possible be based on international consensus.

***Foreign Environments**:* Use of PPM-based trade measures might be motivated by the desire to protect foreign environments, even when there are no spill-over effects to other countries (Category B-4). Governments could wish to influence the types of processes and production methods used in other countries and to raise their environmental PPM requirements out of a general concern about environmental degradation. However, it is arguable whether PPM-based trade measures would be an effective means for reducing unsustainable production and consumption patterns, both in domestic and foreign countries. Present trading rules do not allow one country to use trade measures for the purpose of unilaterally enforcing its own environmental preferences or requirements on other countries in cases where the production externality has no spill-over effects. It is through co-operation and possibly the elaboration of MEAs that the concerns mentioned above can be best accommodated.

b) Type of environmental problem

Another distinction to be made in examining environmental motivations for using PPM-based trade measures is whether the type of environmental problem being addressed arises from: a) pollution concerns or b) resource concerns. It is evident from the case studies presented at the OECD Workshop in Helsinki that these two broad types of environmental problems entail somewhat different considerations with regard to the use of trade measures.

***Pollution concerns*:** PPM-based trade measures have not been frequently used or proposed in cases of transboundary and global pollution when it is hard to identify the specific source of pollution or the particular products which may result from a polluting PPM (cf. also the discussion of feasibility below). One reason which has been advanced is that scientific evidence and opinion on the extent and severity of many pollution problems (such as acid rain and global warming) are often uncertain or mixed. Trade measures have only been used in the context of the Montreal Protocol, where the ozone-depleting substances and phase-out approaches were not difficult to identify. With the exception of the Montreal Protocol, most existing agreements and protocols addressing transboundary and global pollution have not contained PPM requirements, largely because of cost and competitiveness concerns.

Resource concerns: PPM-based trade measures have been more often used and proposed in cases of degradation to living resources, particularly migratory and endangered species. Most of these trade actions have been intended to maintain the integrity of agreements pertaining to the management and conservation of these species since the import/export of the species or products extracted from them, or the actions of non-parties, could undermine the objective and implementation of the agreements. In these cases, the targeted problem (the threatened loss of a particular species) and the solution (promoting more sustainable management and harvesting practices) are more easily identified. Scientific evidence on the status of threatened and endangered species is gaining in certainty, although, in the area of living marine resources, much uncertainty remains as to the status of the species/populations. Moreover, disagreements are not uncommon on proprietary rights over marine resources and the nature of conservation methods to be applied. There are numerous agreements to protect living resources, many of which contain PPM requirements, and the failure to comply with these agreements can mean the rapid and irreversible loss of a species.

2. Competitiveness motivations

Competitiveness motivations are likely to reflect a perception that high domestic environmental requirements put domestic industry at a competitive disadvantage in international markets. High levels of environmental protection in response to government policy or consumer preferences can, however, have positive effects on the competitiveness of domestic producers and countries. They can spur technological change, stimulate investment, improve production efficiency, and promote new industrial sectors and new market niches. Recent studies have documented examples in countries which introduced high environmental standards in advance of others, of both the capacity of existing industries to gain from the required technological adaptation and the strong expansion of new environment-related manufacturers. However, concerns over the potential loss of competitiveness -- whether real or perceived -- are sometimes raised and can be an obstacle to governments in strengthening environmental protection. But such perceptions are difficult to validate and to distinguish from other more purely protectionist concerns.

While research on the competitiveness effects of environmental policies is still ongoing, it has not identified a systematic relationship between existing environmental policies and competitiveness impacts. Nor has it identified evidence of countries deliberately resorting to low environmental standards to gain competitive advantages or to attract investment, or evidence of significant industrial migration to countries with lower environment standards.

The lack of evidence attesting the assumed competitiveness impacts of PPM requirements would thus justify that Governments firmly reject demands sometimes made to introduce so-called "green countervailing duties", or other protectionist or WTO inconsistent trade measures, to compensate for negative competitiveness effects, whether real or perceived, of environmental policies. Governments should also strongly affirm that it would be inappropriate to encourage investment or to promote exports by relaxing domestic health, safety or environmental requirements or their enforcement[15].

3. Value-based motivations

Value-based motivations for using PPM-based trade measures are usually developed in importing countries and aimed at PPM requirements in exporting countries (Category B-4), such as concern for animal welfare when the species in question is not threatened or endangered. National policy responses are sometimes triggered by consumer demands that their consumption of products should not harm animals or the environment in any way. Thus, value-based motivations may reflect home consumers' objections to PPMs that conflict with strong moral or value preferences, leading to a desire to influence other countries towards the values and/or preferences of the importing countries. Friction may arise when PPM requirements are derived from values that may not be universally accepted.

It is sometimes difficult, however, to distinguish values or preferences from what are real transboundary and global environmental problems. What one country considers an environmental problem concerning a migratory species, another country may consider a preference for protecting that species. Countries may vary widely in the value they place on addressing local versus global environmental problems or on dealing with different types of transboundary and global concerns. Value-based motivations of a country depend not only on cultural or other preferences but also on the employment and income opportunities of its population. For many countries, particularly countries confronting poverty or unemployment, economic prosperity and present well-being are more important than issues like the global environment, the protection of species or internalising environmental costs to address them. Thus the differences in views regarding appropriate PPM requirements may stem from

different cultural or other values and policy priorities; from differences in political systems, approaches adopted in resolving problems, and the level of knowledge and understanding of environmental impacts; from varying interpretations of scientific evidence and acceptability of risk; and from differences in financial capacities and technology available to address particular environmental problems.

B. Issues

As described above, a wide range of motivations can be invoked to justify PPM-based trade measures. Taking sustainable management of forests as an example, various environmental concerns or motivations have been put forward, such as climate change, biodiversity conservation, deforestation, social and water conservation. As experience has shown, different groups may invoke different types of motivation when responding to the same environmental problem: what some qualify as an environmental problem may be described by others as a value judgment. As a consequence, the environmental motivations invoked by one country to justify PPM measures may sometimes be perceived as not being legitimate by other countries, thereby leading to international friction.

It may be asked whether particular motivations (or combinations of motivations) can be more frequently associated with certain categories of PPM measures, as described in the Conceptual Framework. As indicated above, where there are no transboundary or global environmental effects, the environment of the importing country is not affected by PPMs used in the exporting or producing country. In this case, trade measures should not be necessary to secure national environmental objectives since countries can decide upon the PPM requirements applicable to production in their territory and implement them through non-trade policy measures. In some cases, however, trade restrictions based on non-product-related PPM requirements (or pressures to implement them) may be sought for competitiveness motivations (i.e. arguing unfair competition to domestic industry) or/and value-based motivation (e.g. concern for animal welfare when species in question are neither shared nor threatened or endangered). As mentioned above, such non-environmental concerns or objectives are difficult to validate and to distinguish from other more purely protectionist concerns.

It has been noted that transboundary pollution not transmitted through traded products (Category B-1, e.g. air pollution) has never been invoked to date as a motivation for taking trade measures. On the other hand, the large proportion of requests for PPM-based trade measures have centered on migratory species and shared living resources (Category B-2) and global environmental concerns (Category B-3).

Countries are liable to contest the PPM requirements of other countries when these differ from their own, whether or not the requirements address an environmental impact transmitted by traded products. This situation may reflect different priorities accorded to the scientific basis or environmental risk evaluation for the PPM requirements; to scientific evaluation versus political choices; or to whether it is justified to apply the precautionary approach in the evaluation process. So far, no institutions have undertaken a comparison and discussion of the differences in PPM requirements between countries nor have criteria been developed to evaluate these variations[16].

With regard to the precautionary approach, Principle 15 of the Rio Declaration states that "in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

The Agreement on Sanitary and Phytosanitary Measures (SPS) also incorporates this approach under certain conditions, particularly taking into account the threat of damage relating to pests and diseases, while the TBT Agreement does not. "Scientific evidence" and "pertinent information", mentioned in Article 5 of the SPS text are not defined. Articles 5, paras. 7 and 8 in the SPS Agreement state: "In cases where relevant scientific evidence is insufficient, a Member may provisionally adopt sanitary or phytosanitary measures on the basis of available pertinent information.... In such circumstances, Members shall seek to obtain the additional information necessary for a more objective assessment of risk and review the sanitary and phytosanitary measure accordingly within a reasonable period of time..." "When a Member has reason to believe that a specific sanitary or phytosanitary measure introduced or maintained by another Member is constraining, or has the potential to constrain, its exports and the measure is not based on the relevant international standards, guidelines or recommendations, or such standards, guidelines or recommendations do not exist, an explanation of the reasons for such sanitary or phytosanitary measure may be requested and shall be provided by the Member maintaining the measure."

Further clarification of rules or criteria for applying scientific evidence and the precautionary approach may be needed to provide a firmer base for assessing and agreeing on legitimate differences of non-product-related PPM requirements among countries. It should be carefully examined whether, or to what extent, PPM requirements applicable to industrial products (outside the scope of the SPS Agreement) should follow the precautionary approach, taking into account the “threats of serious or irreversible damage”. Multilateral co-operation in the context of MEAs would appear preferable to taking unilateral measures on the basis of "pertinent information", in addressing transboundary or global environmental problems.

The fact that the definition of "scientific evidence" and "pertinent information" in Article 5 of the SPS Agreement is not clear raises difficult issues relating to the dispute settlement process and the whole range of principles, concepts and criteria that will be the basis for adjudicating these conflicts. It is sometimes argued that the burden of proof should be put on the country introducing a PPM requirement based on the precautionary approach. Under current trade rules, trade barriers caused by the introduction of such PPM requirements could be perceived as a nullification or impairment of benefits and justify an action under GATT Article XXIII. Others may argue that this approach is inconsistent with the precautionary principle and that the burden of proof should rather be on the country opposing the PPM requirement.

II. Feasibility

The feasibility of using PPM-based trade measures to achieve environmental goals can be discussed from a number of perspectives, notably their technical, economic and legal feasibility.

A main problem is the technical feasibility of identifying and monitoring the processes used to produce traded products, in particular when they do not physically affect product characteristics (Category B of the Conceptual Framework). The technical impracticability of detecting PPMs is a major obstacle to the use of PPM-based trade measures. With present technology, it is impossible to detect most PPMs in the product itself. It cannot be determined at the border whether newsprint has been produced with recycled content, whether fish have been caught by driftnets, whether timber has been harvested from forests which are managed in a sustainable manner, whether wild birds are being managed in a sustainable manner, or whether products have been manufactured using ozone-depleting substances.

In most cases, the presence or absence of a particular PPM can only be verified by on-site inspection, monitoring and certification of the production process in the exporting country. Agreement among relevant countries on verification and certification systems and mutual recognition of such systems could pave the way to greater feasibility of PPM-related trade restrictions. Verification and certification systems have in fact been set up for product-related PPM requirements, primarily in the area of sanitary and photosanitary measures. When trade restrictions are based on non-product-related PPM requirements, in the absence of an agreed certification system for imported products among countries concerned, there is no practical means to identify affected products. This may lead implementing countries to impose restrictions on broader categories of products, than those affected by the regulated PPM. However, trade rules require that a country not use enforcement measures that are more trade-restrictive than necessary. The PPM-based trade measures in the Montreal Protocol have not been implemented because it was not considered feasible (from a technical but also economic point of view) to identify products produced with banned substances.

The cost of verification and certification systems for non-product related PPMs will be high, given the wide diversity of PPMs in various countries. As in other cases where verification and certification systems are established, the cost of the systems and complying with them can create special difficulties for small producers and exporters, in particular from developing countries. ISO is currently developing relevant procedures and mechanisms for implementing such systems. However, even where countries can agree on verification and certification systems for non-product related PPMs, implementation of the associated import restrictions can entail high costs for exporters. Complying with varying PPM-related requirements in different countries can be very costly and pose nearly insurmountable problems. Mutual recognition of the PPM-related requirements, through for example an MEA, accompanied by certification and verification systems can help reduce implementation costs. PPM requirements that are related to the environment impact, but do not specify the PPM itself, should be preferred because they are usually less costly and less restrictive. Cost efficiency and competitiveness in industry are usually best promoted if industry itself can choose the technology and means to achieve the environmental requirements set by authorities.

From a trade rules point of view, the problem of differentiating between physically or functionally similar products bearing no consumption externalities is connected, with the significance accorded to "like products" in the GATT (see also final section of Part I above). Multilateral trade rules and disciplines make no provision for, and have been interpreted not to allow for, import restrictions based on characteristics which are not physically embodied in the imported products and therefore do not impact on the environment in the importing country. To date, GATT dispute panels have concluded that the national treatment provisions of the GATT prohibit differentiation between otherwise "like products" on the basis of PPM-related requirements that do not change the physical characteristics of these products; and that the range of domestic policy measures (taxes and regulations) that can also be applied to such imported products is therefore limited. There is no clear definition of what constitutes a "like product" and GATT panels interpret the concept of "like products" and the applicability of exception provisions on a case-by-case basis[17]. Therefore, in differentiating between physically or functionally similar products, careful consideration should be given as to whether the differentiation (or certification) of the products is technically and economically feasible to avoid trade protection. Border tax adjustment measures also need careful consideration with respect to the feasibility of applying trade rules to non-product-related PPMs or inputs to products; and to the technical and economic feasibility of product differentiation or the calculation of the exact amount of compensation[18].

III. Effectiveness

When considering the use of PPM-based trade measures, policy makers should carefully evaluate the likely effectiveness of these measures, as well as review whether there are more effective alternatives available to achieve the environmental objective. The policy maker should analyse whether such an action could achieve an environmental goal or contribute significantly to the achievement of this goal. For this, it is necessary to evaluate the environmental effects of PPM-based trade measures: for instance, how far, and in what way, they achieve the required reduction in environmental pollution/damage or the conservation and management of resources, which ever is the policy objective.

A number of questions should be addressed regarding the environmental effectiveness of using PPM-based trade measures as a routine instrument in world trade. Effective environmental protection approaches need to build on the common objectives of sustainable development and on the availability of resources and ecological conditions, which will vary by country. For example, agricultural production methods will not be the same in countries with abundant water supplies than in countries with arid areas. Industrial processes may vary in their pollution levels depending on whether they are located in crowded cities or isolated regions. Resource harvesting methods will differ depending on natural endowments. Recycling levels will vary with the amounts of primary and secondary materials available for reuse. Thus, what is an appropriate environmental PPM requirement in one country may be inappropriate for producing the same product in another country. In some cases, it would not be environmentally rational for countries to demand that imported products meet all their PPM requirements, which have been developed for a different place and a different environment.

Another relevant question is who may legitimately set an environmental goal and who should assess the effectiveness of the measures for achieving the goal. If such an assessment does not rest on consensus among concerned countries, but solely with the importing country, this may unreasonably restrict the choices of foreign producing countries. The same is true for differential treatment introduced by MEAs toward non-parties; in this case, in assessing the legitimacy of such treatment, account should be taken of factors such as the scope of the agreement, its degree of transparency, the level of participation and the appropriateness of trade measures for achieving the desired goals.

It is argued that PPM-based trade measures which affect the conduct of policy in a third country will not always directly result in the effective achievement of environmental goals. For instance, trade restrictions or sanctions may in particular deprive developing countries of what is often an important source of livelihood and income which could contribute to improved environmental management. Trade sanctions or PPM-based trade measures which create trade diversion or decrease the economic value of a resource thus contributing to its over-exploitation, can be environmentally counterproductive. The goal of sustainable development should be also taken into account when assessing the effectiveness of measures.

The effectiveness of PPM-based trade measures in bringing about specific intended environmental changes in other countries will also depend on a number of factors. These factors include the market power of the country or countries extending those requirements (e.g. through trade restrictions) relative to that of the country or countries whose exports are targeted, the trade dependence of the specific industry whose product or products are targeted, the volume and direction of trade in the affected product, the type and combination of instruments used, and the appropriateness and feasibility of the requirement imposed.

A. Market power

The effectiveness of a PPM-based trade measure may depend in large part on the market power of the country or countries which implement it. Relevant factors include: a) whether the PPM measure is taken by one or several countries or through multilateral co-operation; b) the relative economic strength of the countries taking the PPM measure and the target country; c) whether these measures concern export dependent economies and products.

Trade restrictions which are implemented jointly by a large number of countries in the context of an MEA can be effective in coercing other countries to change their behaviour and/or to join the environmental agreement (e.g. the Montreal Protocol). In this sense, the experience drawn from the operation of MEAs containing PPM-based trade measures, few as they are, would support the view that they have been effective when they have brought together a large proportion of countries which share an interest in resolving the environmental problem. The threat of PPM-based trade measures may even have been, under certain conditions, an incentive for changing the environmental behaviour of other countries because of the collective economic weight of the participants. These observations are specially valid for Categories B-2 and B-3, e.g. trade measures applicable to non-parties to MEAs.

It is argued that trade measures which are taken by one or a few countries acting alone are likely to be less effective in influencing policy change, but this may depend on the relative economic and political strength of these countries particularly when very specific products are concerned. Countries with large markets upon which exporters are dependent (particularly when they can also mobilise political power) will be more successful in influencing the PPMs used by other countries, than will smaller nations whose market is proportionally less relevant. Thus, some argue that the United States and the European Union have been in a better position to influence environmental policy changes in other countries. For the most part, countries with small internal markets will not be able to impose trade restrictions successfully on large countries to which they export their products.

B. Trade instruments

Under existing trade rules, trade restrictions are allowed under certain conditions on products whose PPMs create an environmental impact on the importing country (Category A). However, trade restrictions based on non-product-related PPMs are in many cases GATT-illegal and need further analysis before their use could be contemplated. Therefore, the following discussion focuses on the theoretical effectiveness of trade instruments in influencing the policy change in other countries, notwithstanding existing multilateral trade rules.

The effectiveness of the PPM-based trade measure would depend partly on the particular trade instrument selected. One may imagine a situation in which a country does not import the product affected by or resulting from the PPM in question or the trade weight of the product is not significant. In these cases, it has sometimes been argued that trade sanctions of a wider scope (e.g. imposed on any product imported from the country concerned) might be a more effective instrument than trade bans or restrictions directed against the specific product with respect to which a policy change is sought. It might be the *threat* of such sanctions rather than their actual use that may influence the environmental behaviour of other countries.

Other types of trade instruments might be effective depending on the environmental or economic goal. It is argued that border taxes could be effective in equalising environment-related costs for products and in addressing competitiveness concerns. However, if countries or firms choose to pay the tax or duty

instead of altering their environmental behaviour, these instruments will not be effective in motivating joint action to address transboundary and global concerns. Tariffs could be an effective means of raising financial resources to improve environmental PPMs, but are not a practical way to transfer funds between importing and exporting countries.

Trade restrictions might be called for in a situation when the trade itself impedes the agreement's effectiveness in achieving the environmental goal (e.g. Category B-3, such as ozone layer depletion). In other words, trade restrictions address the root cause of impediments to an agreement's effectiveness in cases when the products with which the MEA is concerned are widely traded. Thus in the case of the Montreal Protocol, if major producers or consumer nations did not participate, their activities could undermine the agreement through migration of production of controlled substances or products from parties to non-parties. Shifts in production to non-parties could be encouraged if trade were less stringently restricted than production[19]. In this regard, the reasons for non-participation in MEAs (e.g. lack of incentives, inequitable cost sharing, differing risk analysis) should be carefully examined.

It is also important to note that, even in this case, i) there may be legitimate differences in PPM requirements and responsibilities for addressing the agreed global/transboundary environmental problems among countries concerned, ii) technical, financial or other types of capacity building assistance in the policy package can be important for assisting developing countries to upgrade their PPM requirements, and iii) the feasibility and efficiency of the measure should be reviewed (see below).

C. Policy packages

The effectiveness of PPM-based trade measures will depend on the package of policy measures employed to achieve the environmental goal. It is generally recognised that the use of trade measures in isolation is not the first best solution. International co-operation (possibly including trade measures) or multilaterally agreed trade measures used in conjunction with other policy approaches such as diplomacy and persuasion or financial and technical assistance elicits much wider support, as in the case of the Montreal Protocol. It is believed that countries joined the Montreal Protocol for different reasons, e.g. to avoid trade restrictions on their CFC products, to gain access to financial and technical assistance, and/or to avoid trade restrictions on their CFC-produced products. Similarly, the *threat* of trade sanctions may have played a role in reducing high seas driftnet fishing and some practices detrimental to migratory and endangered species, although consultations and negotiations among concerned countries have also played an important role. In these cases, a combination of "sticks" and "carrots" has been used to achieve environmental aims. Particularly with respect to developing countries, the effectiveness of MEAs may depend more on the "carrot" of technical and financial assistance and access to technology than on the "stick" of trade restrictions. It is also important to ascertain that the policy package in which the trade measure is a key component attacks the root cause of the environmental problem. If this is not the case, the policy package should contain a different balance of instruments.

Effectiveness may also differ in the short-term and the long-term. Trade measures may be effective short-term catalysts to promote particular environmental behaviour, but longer-term results may depend on co-operation among the countries concerned, financial assistance and other policies. Some argue that in cases where quick action is needed to redress irreversible environmental harm, trade measures may be effective in the short term, but more far-reaching and policies of consensus may be needed to maintain this result in the longer term.

Finally, broad criteria such as ease in implementation and monitoring and a high degree of international consensus will no doubt increase the effectiveness of PPM-based trade measures. In this

respect, the exercises under way in OECD and other international organisations to improve the compatibility between trade and environment policies are an important contribution to the effectiveness objective.

IV. Efficiency

The relative efficiency of the PPM-based trade measures will depend on the costs of their use (costs and negative impacts including administrative costs and trade distortionary effects) compared with the costs of other policy options considered to be equally feasible and effective. The relevant and appropriate scope of any assessment of a PPM-based trade measure will vary widely according to the type of PPM-based trade measure, as set out in the Conceptual Framework (see Part I above). That said, however, the trade and environment debate is not about the decision of how much environmental protection is appropriate, which is the question that benefit/cost analysis addresses. The focus of the analysis should be on how to achieve most appropriately the desired level of environmental protection, as elaborated in the OECD document "Methodologies for Environmental and Trade Reviews" [OCDE/GD(94)103]. The following issues arise:

- -- identification of equally feasible and effective alternatives with potentially lower costs;
- -- distribution of costs among parties, both in the short term and over time;
- -- existence of significant administrative, implementation or transactions costs;
- -- the possibility of side effects, including any indirect trade impacts, which might offset or supplement the value of meeting the objective. Sometimes PPM requirements or measures may encourage new technology or resource conservation which would cut costs or improve comparative advantage in the long run. On the other hand, there could also be negative trade effects such as the possibility of trade diversion, increased local consumption of unacceptable exports and the over-exploitation of resources whose economic values decrease as a consequence of PPM-based trade measures. There could likewise be impacts on intellectual property or access to cleaner PPM patents owned by "certified" companies in industrialised countries. Negative and positive effects of PPMs would have to be further investigated;
- -- costs associated with lost trading opportunities;
- -- how to ensure that measures (not only direct trade restrictions but also product-related requirements such as packaging/recycling/labelling requirements) avoid or minimise adverse trade effects.

In reviewing the relative efficiency of PPM-based trade measures, national policy-makers should, on a case-by-case basis, assess, *inter alia*, the following elements. For more detail, see the document "Methodologies for Environmental and Trade Reviews" [OCDE/GD(94)103]:

- -- Whether the scope of the measures goes beyond what is necessary to achieve the goals of the environmental policy or to attain an environmental objective. More specifically, whether such measures will affect a wider range of products than required to address an environmental problem; or take the form of trade sanctions aimed at unrelated products (e.g.

controlling fish imports on more species than needed to achieve compliance with a conservation measure on a certain species.)

-- Whether the impact of the instrument (or the policy package) is unnecessarily restrictive, e.g. whether it prescribes an import ban when a less trade-restrictive surveillance mechanism, certification procedure or economic instrument would have accomplished the purpose. Whether compulsory norms are set at an unnecessarily high level, which tends to exclude all imports.

-- Whether the measures are implemented in a way which avoids undue administrative complexities or disguised import/export restraints (e.g. administration and compliance costs). Time-consuming or costly border procedures discourage traders from moving goods to certain markets. With respect to information generating requirements, whether foreign producers are asked to provide excessive and costly information, particularly for small and medium firms.

-- Whether the review procedure of alternative trade instruments allows for a full and balanced evaluation of their trade restrictiveness. A process through which all interested parties are called upon to provide their views could be one way of reviewing all potential trade repercussions.

-- Whether the measures have unintended but *de facto* discriminatory trade effects (especially in relation to labelling, packaging/recycling content requirements and other testing/verification procedures on imports based on certain PPMs -- *inter alia* Category B). When a country sets up the criteria for such PPM requirements, it should take into account the legitimate environmental or other conditions in the imported product's country of origin through appropriate prior notification and consultation procedures.

The trade effects of policies and programmes based on PPMs will depend partly on their design, and poorly-designed policies and programmes can have adverse trade and environmental impacts. In general, the proliferation of different types of national environmental packaging, recycling, recycled content, labelling and other programmes, which are not compatible with one another, can impede trade. Foreign suppliers, particularly developing country exporters, may experience market access problems due to lack of timely and transparent information and practical difficulties, such as arranging for recycling or take-back of packaging and materials. In some cases, a national focus may underline life-cycle programmes thereby possibly favouring domestic producers. Taking as an example recycled content requirements, the important issue would be how to mitigate the negative (*de facto* discriminatory) trade effects on overseas suppliers, while effectively achieving the environmental objective of reducing pressure on waste disposal facilities in the countries imposing them. Trade effects could be assessed in terms of particular market circumstances in which such measures operate and are applied, taking into account: availability of recycled material and of appropriate disposal facilities, costs of participation in disposal/take-back schemes, (including transport distances to markets, necessary adjustments in the packaging materials, particularly for smaller suppliers and developing countries), or the availability of adequate information for foreign suppliers.

If all countries demanded that all imported products comply with domestic rules concerning methods of production, the flow of trade would be seriously impeded. Insistence on compliance with domestic PPM rules would enable countries with large world market shares of particular products to exert a heavy influence on PPMs used. This could diminish the extent to which countries may benefit from trading on the differences in their natural endowments and production methods. In cases where PPMs

cause spill-over environmental effects, the right of individual countries to determine their own level of environmental protection must be reviewed together with their obligation not to cause environmental damage to other countries, as stated in Principles 2 and 13 of the Rio Declaration. Although the most effective and efficient approach will often be co-operation, it is sometimes difficult to agree on adequate action on the source of pollution and cost sharing among countries concerned. There may sometimes even be lack of agreement on the existence of the problem for which one country sets PPM requirements. Some countries believe that certain important costs of past behaviour should also be included in the cost-benefit analysis. The question will then be how to address environmental degradation in the case of failure to agree on such cost sharing or means of regulation.

V. Alternatives to PPM-based trade measures

Recognising that there may be effectiveness, feasibility and efficiency drawbacks for certain uses of PPM-based trade measures, policy makers should carefully explore alternatives likely to be effective in achieving specific environmental goals. The range of possible alternatives to specific PPM-based trade measures include non-trade measures (although they may also have effects on trade) and less trade restrictive trade measures (e.g. labelling requirements as alternatives to unilateral trade sanctions). Different alternatives might be considered depending on the motivation for using a PPM-based trade measure. The feasibility and relative efficiency of the alternatives in achieving the environmental objective should be evaluated. Alternatives can also be used together with, or as complements to, a trade measure in a policy package designed to achieve a particular environmental aim. The choice of alternatives could be affected by the following factors:

-- whether there is a choice between regulatory and economic measures (or the possibility of combining them);

-- whether enlightened consumers and markets are able to modify trends (e.g. through voluntary eco-labelling, certification of environmentally friendly products);

-- the degree of reliance on international co-operation;

-- the extent to which harmonisation or mutual recognition of PPM requirements is feasible;

-- the consideration of developing country concerns: the need for greater transparency; technical, financial and other capacity-building assistance; and the possibility of environmental premiums.

Such alternatives could include: a) harmonisation/mutual recognition of PPMs; b) use of economic instruments (environmental taxes, tradable permits, deposit-refund systems and subsidies); c) financial and technical assistance (capacity building); d) labelling; and e) environmental trade preferences.

The effectiveness of unilateral actions for dealing with environmental challenges outside the jurisdiction of the importing country is too dependent on circumstances and is limited in the long-term when solutions are not forthcoming; they should therefore be avoided. Environmental concerns related to PPMs that have transboundary or global environmental effects are best addressed through international co-operation, including technical and financial assistance, the negotiation of MEAs or the development of international standards. While multilateral co-operation (including trade provisions in MEAs) is an alternative to unilateral trade restrictions/sanctions, a situation may occur where a number of countries have agreed to a co-ordinated approach, but the actions of non-participants undermine the environmental objective, or more generally, the way the MEA can effectively be implemented or enforced. In this regard,

alternatives to trade measures as a means of enforcing compliance with PPM requirements should be envisaged. These could include not only "carrots" to encourage participation, but also approaches such as international monitoring of national enforcement and peer reviews.

In the design of an MEA, whenever other policy options are feasible and equally effective and efficient they should be used in preference to trade restrictions. The aim should be to implement measures that are not more trade-restrictive than necessary to fulfil a legitimate objective. For example, technical and financial assistance and the acceptance of transitional grace periods should be considered when poor environmental performance is mainly caused by lack of technical, human or financial resources, as is often the case for developing countries and economies in transition. The best policy package is likely to vary with the specific circumstances.

A. Harmonisation and mutual recognition of PPMs

Greater harmonisation of PPM requirements can be beneficial for trade and, if set sufficiently high, for the environment. It can reduce uncertainty among exporters and investors and facilitate market access, while contributing to environmental goals when standards are set at an appropriate level. However, it should be recalled that countries can set widely different requirements, reflecting different environmental absorptive capacities and priorities. In many cases, the requirements developed in one country may not be at all environmentally appropriate in another country, and if imposed, can in fact lead to environmental damage in that other country. The extent to which harmonisation is useful and feasible differs with the type of environmental requirements, i.e. particularly whether the environmental effect is purely local or spills over with transboundary and global environmental effects. According to the 1972 OECD Guiding Principles Concerning the International Economic Aspects of Environmental policies, governments should seek harmonisation of environmental policies "where valid reasons for differences do not exist." The Guiding Principles also state that “it is desirable to strive towards more stringent standards in order to strengthen environmental protection, particularly in cases where less stringent standards would not be fully justified by various factors”.

Harmonisation does not necessarily require strict uniformity of environmental requirements. Different types of harmonisation include uniform or graduated standards, as well as procedural harmonisation. Consideration should also be given, where appropriate, to equivalency and mutual recognition approaches as well as convergence approaches for improving compatibility while promoting standards that fully address environmental problems. Particularly valuable is the procedural harmonisation of the criteria, tools and methods for measuring and evaluating environmental effects and risks, including laboratory practices, testing methods, and risk assessment procedures. Steps can also be taken to increase the compatibility of other environmental management practices, such as environmental impact assessments and environmental audits. Such procedural harmonisation, which is undertaken by organisations like the ISO, can facilitate equivalency and mutual recognition approaches. Countries could also seek greater harmonisation within regions, but not to the detriment of trade with countries outside these regions, and explore the harmonisation of environmental requirements at varying levels or in broad classes or groups (graduated standards).

As far as product-related PPMs are concerned, the WTO TBT and SPS Agreements encourage countries to base domestic standards and regulations on international standards, where available and appropriate, to facilitate trade and reduce the possibility of standards acting as protectionist measures. Countries can set their level of protection higher than would be achieved by international standards, provided that domestic standards and regulations are not applied so as to create unnecessary obstacles to

international trade. According to these agreements, countries have to communicate those standards and regulations to concerned countries for comments, with a view to minimising trade distortions through transparency.

With respect to non-product-related PPM requirements, the situation may be different. Harmonisation of non-product related PPM requirements may be less desirable or feasible in the case of local environmental problems (where the environmental effects occur solely in the producing country: Category B-4). Environmental conditions and preferences differ widely among countries, who enact varying PPM requirements to address their particular problem of pollution and environmental degradation. Considerations of ecological well-being and economic efficiency indicate that these requirements are best suited to local conditions and national environmental preferences. The 1972 OECD Guiding Principles state that valid reasons for different environmental requirements include: "*different pollution assimilative capacities of the environment in its present state, different social objectives and priorities attached to environmental protection and different degrees of industrialisation and population destiny*." However, the OECD went on to say that: "*where valid reasons for differences do not exist, Governments should seek harmonisation of environmental policies*."

Some argue in favour of harmonisation or development of minimum PPM requirements in those few cases where environmental costs are a major component of overall production costs. The reasons invoked relate to competitiveness concerns arising from vast differences of PPM requirements; stimulating technical innovation and promoting sustainable development are also mentioned. However, this approach raises many difficulties. In general, the differences in environmental requirements among countries should be seen as environmental elements of comparative advantage. It would be difficult to demonstrate the relationship between environmental requirements and competitiveness effects. Additional difficulties would include problems of establishing minimum standards relevant to the differing environmental conditions and preferences of countries; of finding financial and technical resources to aid developing countries in raising their standards to the minimum level; of diverting resources from efforts to establish harmonised requirements to address transboundary and global environmental problems; and possible protectionist abuse of minimum requirements. Nevertheless, some convergence of these non-product related PPM requirements, including technical or procedural harmonisation, might be beneficial and should, therefore, be further explored.

Harmonisation of non-product related PPM requirements on a consensual basis may be necessary and desirable to address transboundary and global environmental concerns (Categories B-1, B-2, B-3). There may be cases where such harmonisation could lead in the longer term to internationally agreed upon minimum PPM-related environmental requirements. Harmonisation would generally occur within the context of regional and MEAs which take into account the differing environmental conditions, responsibilities, abilities and priorities of countries. There are hundreds of environmental agreements, whose goals include harmonisation of PPMs. Most of these agreements do not contain trade provisions and have not raised trade issues.

Trade measures are sometimes called into play in multilateral environmental agreements when there are problems implementing and enforcing the agreement, particularly those which require costly sacrifices among the parties and/or wish to address immediate ecological threats, including when the non-compliance by non-parties would threaten the achievement of the goals of the agreement. An alternative to trade measures, under certain circumstances, is to harmonise PPMs through environmental agreements which contain their own monitoring and enforcement mechanisms and dispute resolution processes. As an example, the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) is based on the precautionary harmonisation of PPM requirements and incorporates strong enforcement mechanisms, which can help prevent future trade conflicts. As mentioned above, even in the case where

PPM requirements themselves may not be harmonised, the procedural harmonisation of the criteria, tools, methods, techniques required for measuring, testing or evaluating environmental performances and risks is important, which could make mutual recognition of different PPM requirements possible, and should be further developed[20].

B. Economic instruments

The OECD advocates greater use of economic instruments, including environmental taxes and charges, tradable permits and deposit refund system, as complements to regulatory instruments and voluntary approaches to implement environmental policies. Economic instruments have the potential to help achieve environmental goals in a cost-effective manner and to promote innovation. However, economic instruments such as environmental taxes and tradable permits are still at an early stage of development and play only a limited role as a policy tool in the implementation of environmental policies. Given the limited use of economic instruments, much of the discussion of their trade effects is theoretical at this stage.

The trade effects of economic instruments will depend on the particular instruments, their design and the market in which they are operating. Well-designed economic instruments lead to trade patterns and production and consumption patterns which more fully reflect all costs, including environmental costs. Economic instruments should be designed and implemented in accordance with multilateral trade principles and rules so as to avoid unnecessary adverse trade impacts. Governments should ensure when designing and implementing economic instruments, that they are as transparent and as import neutral as possible in order not to disadvantage foreign producers. Where economic instruments are expected to have significant trade impacts, governments should undertake to provide appropriate prior notice and opportunity for consultation with trading partners. Economic instruments based on non-product-related PPMs could bring about *de facto* discriminatory and extra-jurisdictional trade effects when applied to imports on the basis of criteria which reflect the environmental conditions and preferences of the importing country. (In the case of Category B-4, there are no legitimate reasons to apply such measures to imports). Therefore, greater international co-ordination and transparency are needed in their development as well as careful examination of their feasibility, effectiveness and efficiency. In this regard, further examination is also necessary on how multilateral trading rules deal with these instruments, particularly tradable permits and deposit-refund systems.

Environmental taxes, which present the theoretical advantage of permitting market forces to allocate resources efficiently through prices, are more transparent and predictable and their economic impact may be easier to evaluate than is the case for regulatory measures. However, environmental taxes may have greater or lesser trade impacts than regulations, depending on design and factors relating to their implementation, since their specific trade restrictiveness will depend in particular upon their level, the elasticity of demand, the scope of the product concerned and its import market share. To date, most environmental taxes have not been set at high enough levels to exert significant impacts on trade flows.

The multilateral trade rules contain provisions relevant to border tax adjustments, i.e. the application to imports of domestic taxes on like products and the remission of domestic taxes on exports of like products. WTO rules have been interpreted as generally allowing, subject to agreed disciplines, for border tax adjustments on products on the basis of product characteristics or physically incorporated inputs, but not for taxes on imports on the basis of domestic process taxes. These rules do not of course directly limit a country from using taxes to address environment problems occurring in its own jurisdiction. However, some have expressed the view that border adjustments for domestic process taxes may, due to the perceived competitiveness effects of these taxes, be a necessary component of countries'

efforts to use these economic instruments domestically to prevent serious global environmental harm. In general, the practical feasibility, environmental benefits and potential risk for disguised protectionism associated with adjusting taxes on the basis of processes or process inputs at the border are not clear and require further exploration. These issues are being addressed in the WTO in the context of its work on the relationship between trade rules and environmental taxes and charges.

There is very limited experience with **tradable permit** systems in environmental policy and none have been designed to address transboundary and global environmental problems. Discussion of their trade effects is therefore theoretical. These systems operate by setting emission reduction targets for specific pollutants or geographical areas and distributing quota-based permits to firms which are free to trade them in the marketplace. Tradable permit systems designed to restrict pollution at low levels will likely have the same effects on the competitiveness of domestic firms as would stringent regulatory standards or high levels of environmental taxes. Depending on their design, they could also function in a way to deter investment, either domestic or foreign. For example, advantages may accrue to certain firms if initial quotas are "grandfathered" or given to established companies, with new entrants finding it difficult to buy into such systems. Nevertheless, there is no evidence that this has been the case in practice. Indeed, where tradable permits have been used, they have generally been successful in meeting the regulatory goals while providing incentives to achieve them in the most cost-effective manner.

Another type of economic instrument are **deposit-refund systems**, where charges are added to the price of potentially-polluting products and refunded upon the return of the product. The purpose of deposit-refund systems, which are in widespread use in OECD countries for glass bottles, plastic beverage containers and metal cans, is to encourage reuse or recycling of packaging in order to reduce waste. Deposit-refund systems can disadvantage imports if they are applied only to certain types of containers or packaging which are primarily used for imported products or if they are applied in a fashion which is discriminatory or unduly favours domestic producers. They can also affect trading conditions if the initial deposits are high compared to the value of the goods and if foreign producers have difficulties gaining access to recycling or reuse facilities. Producers located long distances from the market where the deposit refund system is applied, as well as small-scale producers with little turn-over in the packaging in question, may be put at a disadvantage. To avoid adverse trade impacts, deposit refund systems should be transparent and designed to be as import-neutral as possible so as not to seriously disadvantage foreign producers.

Subsidies given for environmental purposes, like other types of subsidies, can give advantages to domestic producers and have trade effects. The 1972 OECD polluter pays principle (PPP) states that polluters rather than governments should bear the costs of pollution prevention and control. The 1974 OECD Recommendation on implementing the PPP mentions exceptions where environmental subsidies may be given: 1) to ease transition periods when especially stringent pollution control regimes are being implemented; 2) to stimulate the development of the new pollution control technologies; and 3) in the context of measures to achieve specific socio-economic objectives, such as the reduction of serious inter-regional imbalances. Any assistance is to be given for a fixed amount of time in a clearly defined programme. Under the GATT Uruguay Round Agreement on Subsidies and Countervailing Measures, certain environmental subsidies are specifically placed in the "non-actionable" category[21] together with funding for research activities and for disadvantaged regions and subsidies which are not specific to an enterprise or industry or group of enterprises or industries (non-specific subsidies). Other subsidies may be "actionable", i.e. subject to dispute settlement action or countervailing duties if they cause adverse effects to the interests of other WTO member countries. The important issue for further analysis is to what extent and under which conditions environmental subsidies can be allowed and how their use can be assessed and monitored with a view to limiting untoward effects on trade and environment. The difficulty is in preventing environmental and other subsidies targeted to particular firms, sectors or regions from

acting as a cover for industry protectionism or from giving industries undue advantages in international trade.

C. Financial and technical assistance

Financial and technical assistance, granted either unilaterally or multilaterally, to help countries attain environmentally-sustainable PPMs, may be a possible alternative or complementary approach in some cases. Often countries cannot join or comply with multilateral environmental agreements because they lack the financial and technical resources to do so. If their non-participation in environmental agreements is due to economic problems, financial aid may facilitate their compliance with PPM requirements. When PPM-based trade measures are considered necessary to ensure the implementation of an environmental agreement, there may be a case for provisions for financial and technical assistance and other types of capacity building to those countries most in need.

For example, the Montreal Protocol set up a fund financed by the contributions of developed country parties to help less developed parties comply with the provisions of the Protocol. Through this Multilateral Fund and other global environmental funding sources, a substantial amount of technical assistance, transfer of technologies and financial support is to be provided to less developed parties for qualified projects. Recently, the Multilateral Fund was replenished by US$510 million, over three years, to assist developing and transitional economies that are parties to the Protocol in acquiring technologies which do not deplete the ozone layer.

D. Labelling

Voluntary eco-labels are becoming increasingly widespread. They leave it up to the manufacturer whether or not to apply for a label indicating that certain environmental PPMs were used. Products which do not comply with the eco-labelling criteria can still be imported, but could suffer marketing disadvantages depending on consumer preferences. However, voluntary eco-labels could be a market-based alternative for addressing local environmental problems which raise concerns in other countries. Consumers would be given the choice as to whether their purchases were contributing to better environmental management in these countries. However, voluntary eco-labels might not be a practical alternative for addressing PPMs which could cause immediate or irreversible environmental damage with spill-over effects (Categories B-1, B-2, or B-3). For example, although some five per cent of traded timber is now voluntarily labelled as being sustainably-produced, mandatory environmental labels are often advocated for all timber due to the seriousness of deforestation. Preferences concerning the mandatory or voluntary nature of environmental labels will vary with perceptions of the existence and severity of particular ecological problems.

Well-designed schemes play a valuable role in informing consumers about the environmental consequences of their purchasing decisions. However, eco-labelling schemes can raise particular trade concerns when they include production-related criteria which can discriminate against imports when they reflect exclusively the environmental conditions and preferences of the importing countries. This trade concern may be particularly acute in developing countries and countries heavily dependent on exports. Where eco-labelling schemes have a national focus, they can include criteria that can be inappropriate to the ecological conditions of foreign suppliers. The relationship between trade rules and voluntary eco-labels is being addressed in the WTO.

In principle, negative trade effects could be reduced if governments pursued or encouraged greater transparency, openness and international co-ordination in the development of voluntary eco-labels and if trading partners were included in the process of elaborating eco-labelling criteria for products of special export interest to them. Governments could also explore establishing systems of mutual recognition of certification and of conformity procedures for eco-labels based on equivalency of these procedures, though such approaches should avoid undermining consumer confidence in the eco-labelling programmes. Mutual recognition means that products awarded an eco-label under one country's scheme would be presumed to meet the PPM-based criteria for obtaining an eco-label in another country. Equivalency implies that procedures would be established to verify that environmental PPM requirements or practices in other countries are "equivalent" in their ecological effects although they are not identical with respect to the PPM-based criteria required by the eco-label. The elaboration of criteria for mutual recognition or equivalency is necessary.

Eco-labelling of products with the purpose of identifying non-product-related PPMs would have to be based on some type of certification of the production method used, since such PPMs are not detectable in the traded product itself. Systems of certification involve inspection of plant or harvesting sites and documentation that certain processes or production methods have been employed. Ideally, certification and labelling would be based on a complete life-cycle analysis of products and their substitutes. This can be very time-consuming and costly, and countries vary in their ability to undertake any type of certification of production methods. Technical and financial assistance would be needed to aid many developing countries in establishing sound certification processes. Systems of PPMs certificates are however operated to offer quality guarantee for certain industrial goods and have been established in the context of some fisheries agreements to monitor harvesting methods and trade in the fish managed under these agreements. Certification and labelling is also being tested for a small part of timber trade. Due to the costs involved in developing PPM certification systems, it would be difficult to develop them on an international basis.

E. Environmental trade preferences

An alternative to PPM-based trade measures, which are most often negative or punitive in nature, are **trade incentives** to encourage environmentally-beneficial production practices. Analysis is now being conducted of new types of combined trade, environment and development policy instruments. Proposals for "*environmental trade preferences*" generally involve reductions in tariffs or remittance of tariffs for products which are produced in an environmentally-sound manner. It is argued that these would probably be more viable in the case of local environmental concerns (Category B-4) than for transboundary and global environmental problems which could require more immediate action. There are proposals in some developed countries to link the extension of tariff concessions under the Generalised System of Preferences (GSP) to environmental factors and sustainable management practices for particular goods in exporting countries. There are also suggestions for "*greened*" commodity agreements (*e.g.* International Commodity-Related Environmental Agreements) which would recycle import tariffs to exporting countries based on international standards for sustainable production of commodities. Also proposed are bilateral agreements and mutual tariffs where importing countries would, in effect, agree to pay higher prices for certain goods depending on their environmental PPMs. In most instances, the environmental trade preferences alternative raises many of the same questions as PPM-based trade measures, particularly regarding agreement upon and certification of what constitutes environmentally-sound processes and production methods for individual products in different locales. Trade incentives or preferences offered for improvements in environmental protection methods would, for non-recipients, be sanctions by another name.

Though action through a system of economic incentives has many attractions, using the GSP system for that purpose should be examined with care. First it is not certain that with low overall tariff levels in OECD countries, the preferential margin provided by the system could act as a powerful incentive. Of greater concern is the danger that "greening the GSP" would modify its overall objective -- which was to encourage growth and exports in developing countries -- and open the door to its use as an instrument of pressure on countries which did not apply environmental policies considered suitable by the donor (the main leverage being the threat of withdrawal of existing preferences). It would also raise feasibility problems such as problems of agreeing on international PPM requirements or the criteria for using the preferential measure and a differentiation between physically similar products based on PPMs. Further analytical work is necessary on these proposals in terms of feasibility, effectiveness and efficiency.

ANNEX:
Checklist for assessing PPM-based trade measures and alternatives

National policy makers, when examining the circumstances under which trade measures might prove necessary to make environmentally beneficial PPMs effective, should take into account the motivation, feasibility, effectiveness and relative efficiency of trade and other alternative measures. Relevant questions for the assessment of PPM-based measures include the following:

1. Motivation

-- What is the objective for taking PPM-based measures?

-- Is the PPM requirement product-related or non-product related? Does the PPM have an effect on the characteristics of the product or not?

-- Does the PPM have environmental effects outside the national jurisdiction or not? What environmental effects is the PPM likely to have?

-- Will it - intentionally or not - protect domestic production against foreign competition?

-- Is the intent or the result of the measure to change PPMs applied outside the national jurisdiction?

-- Does the PPM requirement relate to ethical, value or cultural preferences or concerns which may not be shared universally?

Specific objectives to be scrutinised:

a) avoiding a transborder environmental impact on the national territory (Category B-1)

b) the conservation and management of migratory animals and other shared living resources (Category B-2)

c) an attempt to reduce environmental impacts on areas outside national jurisdiction/belonging to global commons (Category B-3)

d) protection of the environment in the national territory (Category B-4)

-- To what extent may the PPM requirement or the PPM-based measure have, intentionally or not, economic impacts in specific market, or industrial sectors? What changes may such requirement or measure bring to industrial location, operating costs or market behaviour?

2. Feasibility

-- Can the producers or exporters in the exporting country or the country upon which the measures are imposed adopt or implement, technically and economically, the PPM requirement on which the measure is based -- e.g. availability of technology, implementation costs including those of certification and monitoring the PPM and ability to pay such costs?

-- How are the products to which the measures would apply identified? Can border inspection or a certification system identify with precision a regulated PPM which does not affect physical product characteristics based on mutual agreement among countries concerned?

-- How does the importing country intend to control whether imported products conform to a specific PPM requirement? How can the importing country respond to eventual circumventing actions?

-- In addition to the technical and economic feasibility, does a differentiation between physically similar products based on PPM requirements result in trade protectionism, thus being inconsistent with multilateral trading rules? Can such product differentiation be considered at least in the context of a relevant MEA?

3. Effectiveness

-- Can the envisaged measures achieve an environmental goal? How and to what extent would the measures lead to the achievement of the environmental objectives (e.g. required reduction in environmental pollution/damage or the conservation and management of resources)?

-- How do the various alternatives take account of differences in environmental circumstances or different approaches to PPM requirements among countries concerned? How do the various alternatives address valid differences of view regarding the science/risk assessment upon which PPM requirements are based?

-- Is the PPM requirement or the envisaged measure based on multilateral co-operation?

-- To what extent is the harmonisation/mutual recognition of the PPM requirement possible?

4. Efficiency

-- Is the envisaged measure the most cost-effective and does it achieve a given environmental goal at the lowest costs and smallest negative trade impacts possible?

-- What are the likely economic costs or negative trade effects of the various alternatives (e.g. unnecessary or discriminatory trade effects, extra-jurisdictional effects)? Does their scope go beyond what is necessary to achieve the goals of the environmental policy? Are there ways of reducing or minimising their negative trade effects, consistent with the achievement of environmental objectives? What effect does the measure have on less developed countries (e.g. market access, competitiveness)?

-- Are there any positive approaches to encourage widespread adoption of environmental commitments in MEAs, including taking into account the particular concerns of developing countries and facilitating their participation through technical and financial assistance and providing flexible implementation?

For more details on the use of PPM-based trade measures, see the section on "Regulatory implications" of the Checklist in "Methodologies for Environmental and Trade Reviews" [OECD/GD(94)103].

NOTES

1. Environmental labelling is also an environmental policy instrument, although most of the schemes are voluntary. Environmental labelling can generally be classified under three types: eco-labelling schemes which are designed to base the award of a label on a life-cycle analysis of the product (generally voluntary); single-issue labelling which highlights a specific aspect of a product such as its bio-degradability (generally voluntary); and negative labelling which indicates a product's dangers or hazardous properties, usually addressing health or safety concerns (generally mandatory). (GATT, Group on Environmental Measures and International Trade, TRE/W/12, June 1993).

2. Current usage in the WTO TBT Agreement distinguishes between standards whose compliance is mandatory and which are denominated technical regulations; and standards for which compliance is not mandatory, named standards. Standards can be enforced or promoted with environmental objectives in mind, such as to prohibit incorporation in certain products of hazardous components or residues; to enforce certain types of marking, packaging or recycling; to promote energy efficiency or to control an emission of pollutants. "Standards" as defined by ISO may be mandatory or voluntary. For the purpose of the present discussion, "standards" in a general way mean technical regulations.

   According to the ISO, a product standard specifies requirements to be fulfilled by a product or a group of products, to establish its fitness for a given purpose. This may include, in addition to any requirements concerning the fitness for a given purpose, directly or by reference, aspects such as terminology, sampling, testing, packaging and labelling and sometimes, processing requirements. A process standard specifies requirements to be fulfilled by a process, to establish its fitness for a given purpose.

3. The coverage of the revised TBT Agreement is limited to product characteristics and their related processes and production methods (TBT Agreement Annex 1). The new SPS Agreement covers PPM requirements/measures which are necessary to protect human, animal or plant life and health against sanitary and phytosanitary risks within the territory of the importing country (SPS Agreement Annex A).

4. In practice, it may not always be possible to classify PPMs unequivocally into these categories. For example, with regard to category A, there may exist some cases in which the environmental impact of an imported product transcends the boundaries of the importing country (causing particularly transboundary pollution through air, water or soil). In such situations policy measures taken by the affected country could be discussed in the same way as under Category B-1 (although such measures are intended to regulate the product, rather than the PPM directly): for instance, the requirement that timber is heat-treated in the exporting country in order to protect the forests of the importing country against pine nematodes.

5. It is, however, debatable whether health and food safety issues should be categorised as environmental.

6. The Polluter Pays Principle recognised that "Differing national environmental standards, for example with regard to the tolerable amount of pollution, are justified by a variety of factors including, among other things, different pollution assimilative capacities of the environment in the present state, different social objectives and priorities attached to environmental protection and different degrees of industrialisation and pollution density" (OECD, Guiding Principles Concerning International Economic Aspects of Environmental Policies, May 1972).

7. The approach of the WTO TBT Agreement is to encourage countries to base product standards and regulations on international standards. However, it is recognised that countries may deviate, under certain conditions, from such standards. The TBT Agreement explicitly states that environmental protection may be considered as a valid justification for deviating from international standards, provided that technical regulations are not applied in such a way as to create unnecessary obstacles to international trade. The TBT Agreement requires that, when countries adopt mandatory regulations which are not based on international standards, they communicate these regulations in draft form so that other countries can comment on them. The obligation to take comments into account reduces the possibility of the new regulations causing barriers to trade.

8. The precautionary approach still involves science but revolves around risk-averse choices/policy decisions.

9. In this context, the ISO 9000 quality system uses the term "special processes" to describe processes, the results of which cannot be fully verified by subsequent testing of the product and where, for example, process deficiencies may become apparent only after the product is in use (ISO 9001, Clause 4.9.2). An example can be found in the case of plastic moulding. The ability of a moulded product to withstand stress may depend on the uniformity of dispersion of additives, moulding temperature, etc.

   Testing techniques and technical progress are important elements when considering such certification. Another concern is that certification systems maintain a high level of integrity and not be used as non-tariff barriers to trade (e.g. through the imposition of "certification fees" on producers or exporters).

10. In this context, protection and preservation of endangered species listed by CITES could raise a "global resource" issue, since their extinction would affect further evolution of all species; whether these species are migratory or not, this environmental issue is listed in category B-3.

11. “Guiding Principles Concerning International Economic Aspects of Environmental Policies" (OECD, 1972), "Environmental Policies and Industrial Competitiveness" (OECD, 1993), and "Increasing the Compatibility of Environmental Policies” [OCDE/GD(93)136].

12. The PPP recognises that "differences in environmental policies should not lead to the introduction of compensating import levies or export rebates (border adjustments), or measures having an equivalent effect, designed to offset the consequences of these differences on prices". GATT Article XX does not provide for using trade provisions to correct a problem of competitiveness (to restore a level playing field).

The analysis done by UNCTAD shows that differences in standards across countries by themselves do not indicate the failure of countries with lower standards to internalise environmental costs or the existence of "unfair" competition. Furthermore, it also indicates that environmental countervailing duties pose several other problems. First, there is the question of what would be the benchmark standard and which country should set it, since an environmental countervailing duty could be used as a tool for a large country to impose its environmental policies on a smaller partner. Second, a country may have very stringent environmental standards for certain pollutants and less stringent standards for others. It would then be necessary to determine who should decide which combination would be the most appropriate. Third, since only goods exported to the country imposing an environmental countervailing duty are affected and goods consumed in the domestic market or other countries would not be affected, the measure could be ineffective in encouraging changes in environmental policies and practices. Fourth, the exporting company could prefer paying the duty rather than modifying its environmental polices. Finally, environmental countervailing duties may contribute to trade friction and adversely affect the multilateral trading system. It is also noted that in practice it is virtually impossible to make a distinction between "legitimate" differences of standards between countries (reflecting e.g. differences between assimilative capacities and social preferences across countries) and "artificial" differences (aimed at obtaining trade benefits from deliberately setting standards at an artificially low level).

13. It should be noted that the Havana Charter (the original text of the GATT) had a general exception clause; "measures taken in pursuance of intergovernmental agreements which relate solely to conservation of fisheries, migratory birds or wild animals", although current GATT rules do not have explicit provisions pertaining to such process requirements.

14. For more details on this categorisation, see the Conceptual Framework for PPM Measures in Part I above.

15 For more details, see paras. 25-39 of the Report on Trade and Environment to the OECD Council at Ministerial Level [OCDE/GD(95)63].

16. It should be noted that the WTO does not have the competence to set such criteria, nor to assess the legitimacy of differing PPM criteria among countries. If such an assessment were necessary in the course of a dispute settlement procedure in the WTO, one possibility would be to solicit views from environmental, scientific or other relevant expertise (e.g. through a technical expert group prescribed under the TBT agreement). Another approach would be to set up criteria on desirable PPM requirements and legitimate differences among countries in an MEA.

17. A recent panel report indicated that the like product determination should be made not only in the light of the physical characteristics, but also in the light of the purpose of Article II (national treatment on internal taxation and regulation). See the section on "like products" in the paper on "Trade Principles and Concepts" [OCDE/GD(95)141].

18. Moreover, further analysis is needed to identify the circumstances under which policy responses might be necessary to address competitiveness effects arising from non-product-related PPM requirements and whether border tax adjustments can be applied to taxes on intermediary inputs to exported products (such as carbon taxes), taking into account recent changes to the GATT Subsidies Agreement in the Uruguay.

19. Effectiveness of trade restrictions against non-parties to an MEA should be carefully examined taking into consideration differing situations of production and consumption of the product regulated among countries concerned; for instance, a trade restriction would be effective against a non-party which is a major producer and exporter to parties, while it would not be effective if such production is essentially for domestic consumption.

20. ISO is already developing some management tools and standards such as life-cycle analysis techniques, environmental management systems, environmental labelling and environmental performance evaluation. The standardisation work in the OECD Chemicals Group is also relevant. The NAFTA also sets up a joint review process of the enforcement of each party's environment requirements.

21. These environmental subsidies are to be used only for the adaptation of existing facilities (those having been in operation for at least two years) to new environmental regulations. Any environmental support is to be one-time only, limited to 20 per cent of the cost of adaptation, strictly for pollution control and available to all firms which can adopt the new equipment or process.