



**CARBON-BASED COMPETITIVENESS,
TRADE AND CLIMATE CHANGE:
PERSPECTIVES OF DEVELOPING COUNTRIES**

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Carbon-Based Competitiveness, Trade and Climate Change Linkages: Perspectives of Developing Countries*

I. Introduction

Issues that link trade and climate change policy reflect in many ways the policy considerations that underlie how developing countries¹ view these two policy regimes. Negotiations are taking place among countries which are Parties to the United Nations Framework Convention on Climate Change (UNFCCC) under the Bali Action Plan (BAP)² adopted by the UNFCCC Conference of the Parties (COP) in Bali, Indonesia, in December 2007, for the purpose of arriving at an agreed outcome that would serve as the basis for long-term global cooperative action in enhancing the full, effective and sustained implementation of the UNFCCC. At the World Trade Organization (WTO), countries that are Members of the WTO have been engaged in trade negotiations that commenced in December 2001 under the WTO Doha Ministerial Declaration and which places the needs and interests of developing countries at the heart of the negotiations.³

This paper looks at how developing countries view issues that link trade and climate change policy. It will seek to highlight views that are commonly or broadly shared by developing countries, focusing on the political and economic considerations that underlie such views.

II. The general principles which underpin developing country responses

It can be said that trade and climate change are, at a fundamental level, linked because addressing these and the issues that they raise are, essentially, policy questions that involve the fundamental economic policy framework of each individual country.

Global trade as shaped by both the international rules and disciplines under the WTO and the structure of the global trade market is an important factor that can influence a developing country's economic development prospects. Trade policy therefore is an important element in any developing country's arsenal of policy tools to use in advancing its development objectives. At the same time, climate change and its impacts are increasingly shaping the environment under which economic activity takes place in developing countries. Hence, climate change policy (including those shaped pursuant to the UNFCCC) with respect to climate adaptation and mitigation becomes an important element in a developing country's development policy toolbox.

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¹ For the purposes of this paper, the term "developing countries" may be used interchangeably with "South" or "Southern countries", and should be taken to mean as countries that are members of the Group of 77 and China in the context of the UNFCCC and countries which consider themselves to be developing countries in the context of the WTO.

² UNFCCC, Decision 1/CP.13.

³ WTO, Doha Ministerial Declaration, WT/MIN(01)/DEC/1, 20 November 2001.

There are, of course, other policies (such as finance, population, environmental and natural resource management, etc.) that would also be important in such a toolbox.

When one speaks, therefore, about trade and climate change linkages from the perspective of developing countries, the jumping off point is how both policy regimes and their linkages with each other affect the sustainable development⁴ prospects of developing countries. Developing countries have tended to view many global issues – especially trade and climate issues – from a “development lens.”

This “development lens” reflects the fact that for developing countries, by and large, achieving such sustainable development remains the primary and overriding national policy objective to which all other policymaking should contribute. This is also the reason why, in both the trade and climate change negotiations, developing countries have been insisting on ensuring that any agreed outcomes be balanced and reflect the essential development concerns and interests of developing countries – not only in order to reflect the treaty foundations of these processes but also to ensure that there is no intended or unintended foreclosure of the sustainable development prospects of developing countries as a result of such negotiations.

The underlying treaty regime and negotiating mandates for both the current trade and climate change negotiations provide ample basis for such an approach by developing countries. In fact, sustainable development is the foundation for effective societal responses to trade and climate change challenges.

In the UNFCCC, the concept of sustainable development as the foundation for global action on climate change can be seen in, inter alia:

- Art. 3.4 which recognizes the right to promote sustainable development;
- Art. 4.7 which provides for the balance of obligations (see Figure 2) among UNFCCC Parties and which requires that in implementing UNFCCC obligations, the Parties must “take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties.” This balance of obligations in Art. 4.7 basically states that the extent of implementation by developing countries of their UNFCCC commitments depends on the extent to which developed countries implement their commitments to provide finance⁵ and technology⁶ to developing countries. Developed countries are also obliged to undertake binding reductions in their GHG emissions under Art. 4.2(a) and (b);
- Art. 2 on the objective of the UNFCCC requires that global climate actions to stabilize atmospheric concentrations of GHGs (such as the mitigation actions of developed countries under Art. 4.2(a) and (b) and the Kyoto Protocol⁷)

⁴ For the purposes of this paper, sustainable development means the achievement of improved living standards and income levels for the population with greater levels and types of diversified agro-industrial economic activity under conditions that generate full employment opportunities and are socially and intergenerationally equitable, ecologically sustainable and adapted to climate change impacts.

⁵ Embodied in UNFCCC, art. 4.3, 4.4 and 4.5.

⁶ UNFCCC, art. 4.5.

⁷ Due to the application of the principle of common but differentiated responsibility, developing countries are not subject to binding emission reductions, although they do have some commitments in common with developed countries under Art. 4.1 of the UNFCCC.

must be done within such timeframes as would allow ecosystems to adapt, secure food supplies, and allow for sustainable development to take place.

In the same vein, the WTO Agreement in its preamble also explicitly states that sustainable development is an institutional objective. This preamble statement, according to the WTO Appellate Body in the US-Shrimp Turtle case, is supposed to give “colour, context and shading to the rights and obligations of Members under the WTO Agreement, generally, and under the GATT 1994, in particular.”⁸

The relationship between trade and climate change measures in the climate regime is governed by, among others, Art. 3.5 of the UNFCCC which states that “measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.” This language, in fact, reflects Art. XX of the General Agreement on Tariffs and Trade (GATT), which allows WTO Members to adopt measures that may be inconsistent with their WTO obligations if such measures are, inter alia, “necessary to protect human, animal or plant life or health” or are related “to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption”, provided that these measures “are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.”⁹

Policy approaches to trade and climate change linkage are therefore premised under both the UNFCCC and WTO on a clear recognition of the right to sustainable development and the need to ensure that such right is promoted and effectively achieved. Maintaining the focus on promoting and achieving the right to development, especially development that is sustainable, is therefore essential for meeting the objectives of both the climate regime under the UNFCCC and the trade regime under the WTO.

In doing so, trade measures (including unilateral ones) that may be imposed to combat climate change must not, among other things, constitute arbitrary or unjustifiable discrimination or be a disguised restriction on the international trade of developing countries. In addition, such trade measures must be undertaken taking into account the development needs and priorities of developing countries – i.e. they must be designed and implemented in such a way that they support rather than hamper the achievement of developing countries’ development objectives.

III. Developing country issues with respect to trade-related measures in addressing global climate concerns

From the perspective of developing countries, trade measures¹⁰ are not necessarily the best nor the most appropriate means for addressing climate change concerns. Rather,

⁸ See WTO Appellate Body, Report of the Appellate Body: United States – Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R, 12 October 1998, para. 155.

⁹ See WTO, 1994 GATT, art. XX(b) and (g).

¹⁰ These trade measures include, but are not limited to, tariff liberalization for certain goods, standard setting, border adjustment measures (such as the imposition of carbon content-based duties on imports

there is great concern that the use of trade measures by developed countries ostensibly to address climate change concerns may in fact have the effect of restricting the market access of developing country products in developed countries and of enhancing the competitive edge that developed countries have in global trade.

A. Tariff liberalization of climate change-relevant environmentally sustainable technologies

In the WTO, developed countries such as the European Union and the United States have pushed for the removal of tariff and non-tariff barriers by all WTO Members on the cross-border trade of “goods and services that contribute to environmental protection.”¹¹ They argued that doing so would be an important contribution to addressing climate change in terms of enhancing the transfer of climate-relevant technology to developing countries. However, developed countries often impose significant trade barriers to developing countries’ exports of such goods. The EU, for example, imposed anti-dumping duties of up to 66% on energy saving lightbulbs made in China. In both the US and EU, Brazilian exports of biofuels face significant tariff (at least 25% in the US and 50% in the EU) and non-tariff barriers (in the form of subsidies to domestic biofuel producers).

The US-EU proposal, had it been agreed to at the WTO, would have committed WTO Members, including developing Members, to “work towards an even more ambitious and far-reaching result in terms of expanding market access for environmental goods and services.” The mercantilist interest of the EU and the US underlying the proposal is clear in that:

- the basis for the US-EU proposal are their existing market access-oriented proposals that have already been rejected by developing countries;
- it completely lacks any reflection of developing country proposals on how to ensure a development-oriented outcome; and
- it does not make suggestions about how to solve the technical difficulties that have discredited the list-based approach to identifying environmental goods at the WTO. For instance, the inclusion of certain products in the list proposed by the EU and the US have already been criticized because these products could serve both environmental and non-environmental purposes.

The implicit assertion in the proposal that the best approach for dealing with environmental services and their contribution to having clean and healthy environments is trade liberalization is not necessarily convincing. Evidence of the positive environmental and developmental impacts of the cross-border provision of environmental services on the developing country importer remains to be seen. With respect to environmental goods, the proposal’s argument that trade liberalization

or tax rebates on exports), and sectoral approaches (e.g. establishing emissions caps for specific industrial sectors using sector-based rules or standards).

¹¹ See, e.g., the joint EU and US proposal on climate-related goods in Job(07)/193 (29 November 2007).

would lead to greater access by developing countries to the products identified in the US-EU proposal falls on the following points:

- The list of products proposed, given their greater technological content, means that they are mainly produced by developed countries.¹² Given their price (due to higher production costs, value added, and royalty payments arising from the embedded intellectual property rights¹³) and technical content, they may hence be difficult for resource constrained developing countries to acquire or, once acquired, to adequately maintain them using only local technicians and materials;
- Even while developing countries may theoretically have commercial access to such products, the large-scale utilization and promotion thereof would still need to be anchored on a solid institutional and regulatory framework to ensure that they are absorbed and utilized in a way that provides developmental benefits. Such framework may often be difficult to immediately establish in a resource constrained context, unless done carefully, sequentially and strategically;
- a focus on the elimination of trade barriers is overly narrow and, in a developing country context, has the potential to limit or wipe out the ability of developing country producers to develop sufficient production and competitive capacity with respect to such environmental goods and services;
- trade liberalization of such goods by itself will likely not have a great impact in terms of GHG emission reductions and, furthermore, might not even result in greater trade flows of such goods¹⁴.

When the proposal was discussed during the trade ministers' meeting on climate change hosted by Indonesia on the sidelines of the 13th UNFCCC COP in December 2007, it was sharply criticized by developing countries that participated in the meeting.¹⁵ In particular, criticisms focused on its failure to effectively address

¹² The list of products in the US-EU proposal was drawn from a World Bank study that identified 43 products as being directly relevant to climate mitigation (out of a list of 153 environmental goods identified by some developed countries in an April 2007 submission [Job(07)/54] to the WTO environmental goods negotiations). The World Bank study notes that while developing countries' trade in climate-friendly technologies is growing rapidly, "these countries continue to be net importers overall." See World Bank, *International Trade and Climate Change: Economic, Legal, and Institutional Perspectives* (2008), p. 79.

¹³ IPRs may act as a barrier to the transfer to and access by developing countries of climate-friendly technologies, whether through trade or other modalities, through, for example, excessive royalty fees, refusals to license, "ever-greening" of patents by patent holders, patent litigation, and patent-based constraints on innovation. See e.g. South Centre, *Accelerating Climate-Relevant Technology Innovation and Transfer to Developing Countries: Using TRIPS Flexibilities Under the UNFCCC* (draft); see also ICTSD, *Climate Change and Trade on the Road to Copenhagen: Policy Discussion Paper*, December 2008, p. 32. (hereafter ICTSD Copenhagen)

¹⁴ See e.g. ICTSD Copenhagen, *supra*, p. 31, noting that "[a] whole host of complementary measures – regulatory, capacity building, financial and technology-related – will be required. ... demand for these products [the 153 "environmental goods" suggested by developed countries in the WTO] may be determined by factors other than tariffs such as GDP, foreign direct investment, enforcement of environmental regulations (shown by environmental performance indices) and the number of bilaterally-funded 'environmental' projects."

¹⁵ See e.g. TWN, *Trade ministers propose more intensive trade-climate engagement*, TWN Bali News Update 8, 11 December 2007.

concerns identified in developing country proposals for an integrated or project-based approach¹⁶ as well as other developing country proposals¹⁷.

Market opening by developing countries to developed countries' environmental goods and services through precipitate tariff and non-tariff barrier elimination outside of their development context could indeed lead to a situation of technology-dependency in which developing countries depend on developed countries as the providers of such goods and services. A more appropriate approach requires the promotion of broader policy measures designed to support developing countries' ability to adopt, adapt, and innovate on such goods and services (such as flexibilities in innovation and intellectual property regimes, non-commercial technology and skills transfers, support to research and education, support to infrastructural development) as well as develop their own environmental goods and services in order to support economic development and diversification efforts. Such an approach would also need to be accompanied by adequate financing facilities, to ensure that trade liberalization, modernization or innovation effectively materialize.

The way for the environmental goods and services negotiations and their outcome to contribute to the climate change issue is not to press developing countries to make more trade liberalization commitments which could limit their policy space further. Rather, the environmental goods and services negotiations, as with the rest of the WTO's Doha negotiations, should result in an outcome that reflects the need of developing countries for continued policy choice and flexibility in trade and sustainable development policy.

B. Intellectual property rights

An essential component of global action to address climate change is the continuous innovation and rapid diffusion of climate-related environmentally sound technologies (ESTs) especially to developing countries. The innovation process can be featured as a set of activities, e.g., invention, adoption, diffusion, and learning by doing, etc.

Although the transfer of ESTs from developed to developing countries is, under the UNFCCC and its Kyoto Protocol, a treaty commitment on the part of developed countries,¹⁸ actual transfers on a non-commercial basis have not really taken place.¹⁹

¹⁶ See e.g. TN/TE/W/51 (3 June 2005), TN/TE/W/57 (4 July 2005), TN/TE/W/60 (19 September 2005), TN/TE/W/67 (19 June 2006) of India; TN/TE/W/62 (14 October 2005); Job(07)/77 of India and Argentina.

¹⁷ Submissions by TN/TE/W/59 (8 July 2005) of Brazil; TN/TE/W/55 (5 July 2005) of Cuba. In oral statements in various meetings of the Committee on Trade and Environment Special Session, Argentina, Brazil, Colombia, Bolivia, Venezuela, Paraguay, Ecuador, Egypt, South Africa, China, and others all stressed the need for development to be a major component in the negotiated outcome.

¹⁸ UNFCCC, Art. 4.5. See also Kyoto Protocol, Arts. 10(c) and 11.2(b). On this same point, TRIPS Art. 66.2 also contains a treaty obligation for developed countries to provide incentives to their enterprises and institutions in order to promote and encourage technology transfer to least-developed countries.

¹⁹ For example, a recent study of the extent to which climate-relevant technologies have been transferred from their origin countries, as measured by the extent to which an invention is patent in a country outside of the country of invention, indicates that the Kyoto Protocol (and by extension the UNFCCC) "does not seem to have had a significant impact on the international diffusion of climate mitigation technologies", pointing out that there was essentially no additionality in terms of the internationalization and diffusion of patented technologies as a result of the UNFCCC and the Kyoto

Developed countries, in general, tend to view commercial trade in these ESTs as the primary means for transferring them to developing countries, while developing countries have generally viewed such transfers as non-commercial activities that must be undertaken in compliance with treaty commitments.

Having EST transfers from North to South primarily take place through private sector-driven commercial transactions would subject such transfers to the vagaries and difficulties of international commercial trade relations – in terms of accessibility due to the cost and other terms of transfer, sale or licensing, the adaptability and appropriateness to the development and other conditions of the receiving party, and the innovation constraints arising from IPRs that may be embedded in such ESTs.

As Martin Khor has pointed out:

6. Technology transfer is not merely the import or purchase of machines etc. at commercial rates. A central aspect of technology transfer is the building of local capacity so that local people, farmers, firms and governments can design and make technologies which can be diffused into the domestic economy. In the first stage of technological development, developing countries can go through three stages: (a) initiation stage, where technology as capital goods are imported; (b) internalisation stage, where local firms learn through imitation under a flexible IPR regime; (c) generation stage, where local firms and institutions innovate through their own R and D. ... In stage 1, the country is dependent on capital imports, some of which (that are patented) may be extra high in cost because of the higher prices enabled by monopoly margins. In stage 2, costs may be lowered by the “generic versions” locally produced. In stage 3, the local firms are able to design and make their own original products. Technology transfer may involve the purchase and acquisition of equipment; the know how to use, maintain and repair it; the ability to make it through “imitation” or reverse engineering; to adapt it to local conditions; and eventually to design and manufacture original products. The process of technology transfer involves progressively climbing through all these aspects.

7. Several conditions have to be present for technology transfer and development to take place. The absence of such conditions can form barriers to technology transfer. Among the barriers that are normally listed are poor infrastructure, inadequate laws and regulations, shortage of skilled personnel, lack of finance, ignorance of technology issues, high cost of certain technology agreements, problems created by equipment suppliers, and intellectual property rights..²⁰

Transfers of these ESTs have various IPR issues since most involve patented technologies owned by firms in developed countries.²¹ As developed countries have

Protocol. See Antoine Dechezleprêtre et al, *Invention and Transfer of Climate Change Mitigation Technologies on a Global Scale: A Study Drawing on Patent Data – Final Report*, December 2008, p. 23. Such a conclusion clearly implies that developed country Parties, which are mainly the countries of invention for many patented technologies, have not taken any effective steps to comply with their UNFCCC and Kyoto Protocol treaty commitments to promote and encourage technology transfer (if they had done so, there would have been greater increases in the growth rate for climate mitigation technologies as compared to the overall average growth rate for all technologies). In fact, the study points out that 75 percent of patent internationalization and transfers (e.g. patenting outside the country of invention) “occur between developed countries” and that the same phenomenon with respect to developing countries “are still limited (18%) but are growing rapidly.” *Id.*, p. 29.

²⁰ Martin Khor, *Note on Access to Technology, IPR and Climate Change*, TWN Bonn Briefing Paper 1, June 2008, para. 6. (hereafter Khor)

²¹ At present the global frontier in technology invention and innovation is dominated by the developed world. The vast majority of patents and scientific journals are concentrated in developed countries, with

not fulfilled the technology transfer commitments under the UNFCCC, overcoming IPR barriers to technology transfer – both perceived and actual – is a challenge for developing countries. In this context, it is important to identify the barriers to effective technology transfer of climate-related ESTs to developing countries, in particular those that pertain to the relationship between IPRs over such ESTs.²²

IPRs are considered to be major factor in the debate related to technology transfer, particularly in cases where technology is patented. By granting monopoly rights to their holder, IPRs effectively allow patent holders, for example, to acquire market development lead times, increase prices and charge royalties. In this context, IPRs influence the international policy environment needed to facilitate development, transfer and diffusion of ESTs in developing countries and LDCs. However, international co-operation on technology transfer has been largely limited to voluntary actions.²³

There are an increasing number of patents on climate related technologies, including with respect to the number and scope of patent claims in wind energy and biofuel technologies.²⁴ This could pose serious concerns about the adverse effect of patents on climate-related technology transfer.

Developed countries and many scholars contend that IPRs are not a barrier to transfer of technology to developing countries. Rather, they argue that strong IPR protection and their effective enforcement in developing countries creates a facilitative environment for transfer of technology to the developing countries. Moreover, it is also argued that the IP system also encourages domestic institutions to make greater investments in R&D and further develop new and improved technologies in various sectors.

However, an UNDP study on transfer of low carbon technologies to developing countries points out that it is questionable whether technology transfer under stringent IPR regimes in developing countries can have long term benefits for the recipient developing country because recipient firms in these countries may be less likely to gain access to the underlying knowledge that is necessary to develop technological capacity within the recipient country, and thus it can retard the recipient country's

very little or no activity in most developing countries. Core technologies are mainly imported from developed countries. China estimates that over 85% of patents in many of its core high-technology economic sectors are owned by companies based in developed countries. See e.g. Shane Tomlinson et al., *Innovation and Technology Transfer: Framework for a Global Climate Deal*, E3G and Chatham House, 2008, p.56

²² As Khor notes, “[w]hether IPRs constitute a barrier or an important barrier depends on several factors, such as whether or not the particular technology is patented, whether there are viable and cost-effective substitutes or alternatives, the degree of competition, the prices at which it is sold, and the degree of reasonableness of terms for licensing, etc. Some technologies are in the public domain, or are not subjected to patents. But many key technologies are patented. And many technologies of the future will also be patented.” See *id.*, para. 8.

²³ Mukul Sanwal, “Leadership in the Climate Change Negotiations”, *South Bulletin: Reflections and Foresights*, South Centre, 1 November 2008, p.2.

²⁴ See e.g. <http://www.epo.org/topics/innovation-and-economy/emerging-technologies/article-10.html> and <http://www.epo.org/topics/innovation-and-economy/emerging-technologies/article-7.html>.

long-term ability to absorb and innovate on the basis of new low carbon technologies, which is critical for their sustainable development.²⁵

Another study also points out that the informative effects of patent grants through disclosure do not necessarily amount to enhancing technological capacity for developing countries because of several reasons, including:²⁶

- the information disclosed may be very minimal and insufficient to enable competing firms to learn much from the same;
- use of the accessed information is conditioned by terms of licensing agreements by the patent holder;
- in multiple claim patents information disclosed is likely to be so provided that competitors cannot reproduce all aspects of the claims;
- patent specifications may not transfer actual know-how; and
- by the time firms in developing countries may learn the same the technology may have become obsolete or further updated.

Furthermore, it has been pointed out in a study by the Sussex Energy Group that developing country firms do not seem to have access to the most cutting edge technologies, and where they have had access to cutting edge technologies, there are doubts about the extent to which they have had access to the know-how underlying those technologies.²⁷

Finally, another study suggests that the practice of patent exportation – i.e. the patenting of inventions in another country outside of the country of invention – could have a “crowding out effect” with respect to domestic innovation and invention. That is, as more “foreign” inventions are patented in a technology-needing country, domestic inventors wishing to patent local inventions may find it difficult to do so as similar “foreign” inventions may have already taken up the patent. On the other hand, in the context of climate change, should domestic demand for more climate change-related technologies increase (whether as a result of policy changes arising from UNFCCC negotiations or as a result of domestic environmental and economic needs), the crowding out effect of “foreign” imported inventions which are patented domestically is lessened as domestic innovations and inventions are spurred by demand.²⁸

²⁵ Jim Watson et al., *Technology and Carbon Mitigation in Developing Countries: Are Cleaner Coal Technologies a Viable Option?*, in *Human Development Report 2007/2008, Fighting Climate Change: Human Solidarity in a Divided World*, Human Development Report Office, UNDP Occasional Paper 2007/16, p.6. Moreover, the study also points out that access to key patents by developing country firms in itself is not sufficient for effective technology transfer because full use of the patent is likely to require access to a variety of related information sources that are not sufficiently disclosed or fully explained in the patent itself.

²⁶ Carlos M. Correa, *Technology Transfer under International Intellectual Property Standards*, in Keith E. Maskus and Jerome H. Reichman (eds), *International Public Goods and Transfer of Technology under a Globalized Intellectual Property Regime*, Cambridge University Press, 2005, pp. 239-40

²⁷ David Ockwell, *Intellectual Property Rights and Low Carbon Technology Transfer to Developing Countries – A Review of the Evidence to Date*, UK-India Collaboration to Overcome Barriers to the Transfer of Low Carbon Energy Technology: Phase 2, Sussex Energy Group, UK, TERI, India, Institute of Development Studies, UK, April 2008, p.5

²⁸ See e.g. Antoine Dechezleprêtre et al, *supra*, pp. 27-28.

Finally, since most of the ESTs are available in developed countries, IPRs held over these technologies by firms in developed countries can impede the ability of developing countries to have meaningful and affordable access to ESTs through:²⁹

- High royalty fees;
- Refusals to license;
- “ever-greening” of patents;
- Increasing patent litigation; and
- Impediments to innovation.

Under the TRIPS Agreement, there are some flexibilities which are available to developing countries in order to promote their development policy objectives (including effective adaptation to climate change). These flexibilities include, but are not limited to, compulsory licensing, parallel importation, exemptions to patentability, exceptions to patent rights and competition policy. In addition to these, national IP laws may also contain flexibilities on which the TRIPS Agreement is silent, like grounds for revocation of patents.³⁰ Finally, least-developed countries could seek full compliance by developed countries of their TRIPS Agreement obligation to provide “incentives to enterprises and institutions in their territories for the purpose of promoting and encouraging technology transfer to least-developed country Members in order to enable them to create a sound and viable technological base.”³¹ In addition to such TRIPS flexibilities, developing country WTO Members could also seek a WTO Ministerial Declaration on TRIPS and Climate Change in order to provide greater clarity and additional flexibility to the use by developing countries of TRIPS flexibilities in relation to climate-related ESTs.

There have also been suggestions for the relaxation of IPR regimes in relation to climate-friendly ESTs such as “(a) An exemption for patents on climate-friendly technologies and products; (b) An exemption on patents in developing countries only, while patents can still be granted in developed countries, to allow for recovery of innovation cost, and provide incentive; (c) Developing countries, if they so desire, are allowed to exclude patents on climate-friendly technologies and products; (d) Voluntary licenses must be automatically granted on request, which will be free of royalty; (e) Voluntary licenses are automatically given and compensation is provided.”³²

As a result of such concerns, and taking into account TRIPS flexibilities available to them, developing countries in the UNFCCC negotiations have pushed for a relaxation of existing IPR regimes in relation to the transfer of climate-related ESTs to developing countries. In their proposal for a technology mechanism to operationalize

²⁹ Examples of these barriers can be found in Khor, *supra*, para. 19; and in

³⁰ However, the extent to which these flexibilities can be used for facilitating transfer of ESTs is debatable because of the possibility of narrow or liberal interpretations of these flexibilities.

³¹ TRIPS, art. 66.2. Unfortunately, however, as in the UNFCCC, developed countries have not complied with this treaty obligation and discussions within the WTO’s Working Group on Transfer of Technology (WGTT) have been inconclusive. LDCs have generally considered the implementation of TRIPS Art. 66.2 to be virtually non-existent and inadequate in promoting effective technology transfer and it is still unclear where technology transfer has actually taken place pursuant to this treaty obligation.

³² Khor, *supra*, para. 18.

UNFCCC Art. 4.5, the G77 and China proposed that a technology action plan to be established under their proposal would “ensure that privately owned technologies are available on an affordable basis including through measures to resolve the barriers posed by intellectual property rights and addressing compulsory licensing of patented technologies.”³³ The same proposal suggested that the mechanism should be able to support and finance, inter alia, the costs of “compulsory licensing, cost associated with patents, designs, and royalties.”³⁴

In various other individual submissions and statements in the UNFCCC negotiations, developing countries have called for, inter alia:

- a suitable IPR regime for accessing technologies owned by the private sector;³⁵
- an IPR sharing arrangement for joint development of ESTs;³⁶
- the development of criteria on compulsory licensing for patented ESTs, joint technological or patent pools to disseminate technologies to developing countries at low cost, time-limited patents, the provision of fiscal incentives to technology owners to obtain differential pricing;³⁷
- looking at new approaches regarding IPRs and technology sharing facilitation (such as an approach similar to the WTO TRIPS and Public Health Declaration);³⁸
- Expansion of the public domain for publicly funded technologies and exemptions for climate-friendly technologies.³⁹

C. Standard-setting

Energy efficiency standards can be regulatory vehicles that can be used to promote energy efficiency and change producer and consumer behaviour with respect to the production and use of energy. However, there are great variations in terms of the methodologies, technical bases, testing modalities and procedures, and enforcement processes in defining and implementing such standards.

In the context of trade competitiveness, such standards are “more likely to adversely affect industrial competitiveness than carbon taxes”, according to the World Bank.⁴⁰ They may have the effect of being non-tariff trade barriers. The World Bank has modeled the trade effects of energy efficiency standards and concluded that, whether

³³ Antigua and Barbuda on behalf of the Group of 77 and China, Proposal for a Technology Mechanism under the UNFCCC, FCCC/AWGLCA/2008/MISC.5.

³⁴ *Id.*

³⁵ India, during the technology workshop, at http://unfccc.int/meetings/adhoc_working_groups/lca/items/4423.php

³⁶ China, in FCCC/AWGLCA/2008/MISC.5

³⁷ See e.g. China, in FCCC/AWGLCA/2008/MISC.5; Pakistan and Bolivia, in FCCC/AWGLCA/2008/MISC.5/Add.2

³⁸ Brazil, in FCCC/AWGLCA/2008/MISC.5

³⁹ Bolivia, in FCCC/AWGLCA/2008/MISC.5/Add.2

⁴⁰ World Bank, *International Trade and Climate Change: Economic, Legal, and Institutional Perspectives* (2008), p. 11. (hereafter WB Trade and Climate)

such standards are imposed by importing countries, exporting countries, or both, there are “strong negative effects on competitiveness” – i.e. trade decreases.⁴¹

In this context, developing countries have generally stressed that the development of such standards must be consistent with, inter alia, the WTO Agreement on Technical Barriers to Trade which requires, for example, that such standards be based on international standards where they exist.⁴² Furthermore, they have also stressed that there must be due consideration for the specific national circumstances of developing countries when standards are to be applied. In relation to the UNFCCC and its applicability to climate-relevant standards-setting, it is important to note that the UNFCCC does recognize the need to ensure that such standards-setting does not adversely impact developing countries.⁴³

However, a corollary issue that many developing countries have also often raised is that in shaping such international standards, developing country participation must be ensured.⁴⁴ Also, standards must provide for some flexibility to allow developing countries to reflect in such standards their own development context. Absent such effective presence and participation by developing countries in international standards-setting, and the provision of appropriate flexibilities in international standards for developing countries, there is deep concern among developing countries that such standards could be used to block their exports.

D. Sectoral approaches

Developed countries have, in the UNFCCC negotiations, supported a “sectoral approach” to emissions reduction. Under this approach, UNFCCC Parties, including developing countries, would commit themselves to having GHG emission caps on specific industrial sectors such as iron and steel, automobiles, and cement. Under such caps, emitters would be issued with emission rights in the form of emission allowances that could then be traded under national or regional emission trading systems. Such an approach has been described by Japan, one of its major proponents, as a way of creating a “level international playing field of competitiveness” with respect to these specific sectors. Such proposals in relation to sectoral approaches by developed countries – especially Japan and the EU – “are motivated in part by concerns that their domestic climate regulations will: 1) reduce the competitiveness of their firms and products in domestic markets; 2) reduce the competitiveness of their firms and products in international markets; and/or 3) cause the migration of

⁴¹ Id, pp. 27-29, and appendix 4.

⁴² See e.g. WTO Agreement on Technical Barriers to Trade, art. 2.4.

⁴³ The UNFCCC preamble stresses that “standards applied by some countries may be inappropriate and of unwarranted economic and social cost to other countries, in particular developing countries”. It also states that “responses to climate change should be coordinated with social and economic development in an integrated manner with a view to avoiding adverse impacts on the latter, taking into full account the legitimate priority needs of developing countries for the achievement of sustained economic growth and the eradication of poverty” and further that all countries “need access to resources required to achieve sustainable social and economic development and that, in order for developing countries to progress towards that goal, their energy consumption will need to grow”.

⁴⁴ The TBT Agreement recognizes this need implicitly in art. 2.6.

energy/GHG intensive industries to developing countries – a tendency referred to as ‘carbon leakage’.⁴⁵

This approach has been generally opposed by developing countries in the UNFCCC negotiations, including in the negotiations under the Bali Action Plan and in the negotiations under the Kyoto Protocol for the post-2012 mitigation commitment periods for developed countries. Developing countries generally argue that:

- such an approach is not consistent with how the concept of “sectors” under the UNFCCC,⁴⁶ which is more about domestic economic sectors as opposed to industry sectors;⁴⁷
- having an industrial sector-based approach, rather than the broad economic sectors identified in the UNFCCC, could open the door to the establishment of new international GHG limitation-focused standards and obligations for such industrial sectors that could effectively put constraints on the ability of developing countries to: (a) export products in these sectors⁴⁸; and (b) develop and expand productivity in the industrial sectors that are being targeted for emissions caps in developed countries’ proposals.⁴⁹ This would have a knock-on effect in terms of restricting the ability of developing countries to diversify the productive capacity and base of their economies by shifting towards more domestic industrial production of higher value added manufactured products (for which the development of energy-intensive and high-emission industries

⁴⁵ Third World Network, Sectoral Approaches in Climate Negotiations: Considerations for Developing Countries, TWN Accra Briefing Paper 1, 15 August 2008, p. 2. (hereafter TWN Sectoral). Furthermore, as TWN notes, “[e]ven if sectoral negotiations prove unsuccessful, efforts by developed countries to negotiate them could be used as evidence that subsequent unilateral measures are necessary, justified and do not constitute disguised restrictions on international trade”, thereby enabling them to later on claim that such measures, even if inconsistent with WTO rules on non-discrimination, would still be allowed as valid exceptions under Art. XX(b) or (g) of the GATT 1994.

⁴⁶ For example, with respect to technology transfers, UNFCCC Art. 4.1(c) contemplates economic sectors rather specific industrial sectors – i.e. the provision identifies “relevant sectors” as “including the energy, transport, industry, agriculture, forestry and waste management sectors” rather than specific industrial sectors such as iron and steel, chemicals, or cement. Furthermore, a typology of mitigation and adaptation sectors have been used in the context of various activities (such as technology needs assessments, national adaptation action plans, etc.) under the UNFCCC. The Kyoto Protocol identifies emissions from two specific sectors – aviation and marine transport – in relation to their future inclusion under emission limits. Sectors are referred to, in various contexts, in UNFCCC Arts. 3.3 and 4.1(c), and in Arts. 2.1(a), 2.2, 6.1, 10.1(b) and Annex A of the Kyoto Protocol. See e.g. TWN Sectoral, p. 2.

⁴⁷ See e.g. Argentina, in FCCC/AWGLCA/2008/MISC.5

⁴⁸ See e.g. ICTSD Copenhagen, supra, p. 14.

⁴⁹ A TWN analysis suggests that the Japanese or EU conceptualization of the sectoral approach gives rise to concerns that such approach may be used to: “**Establish new international standards.** Sectoral approaches could justify the creation of new international rules or standards on a sector-by-sector basis for energy/GHG-intensive industries that directly impose new and inappropriate costs on products exported from developing countries; **Justify trade barriers by developed countries.** Sectoral approaches could justify the imposition by developed countries of new trade barriers on products or technologies from developing countries – for example, by justifying new trade bans, border adjustments or standards that limit trade in energy/GHG-intensive products; **Change policies in developing countries.** Sectoral approaches could justify efforts by developed countries to alter the trade-related domestic policies of developing countries – for example, by removing barriers to markets access for developed country products, or strengthening intellectual property rights over low-emission technologies or climate-resistant crops “owned” by companies in developed countries.” TWN Sectoral, pp. 2-3

such as iron and steel, cement, and chemicals is the foundation). This would thereby “tilt the playing field’ and to pass on to developing countries the costs incurred by developed countries of implementing their obligations under the Convention and Kyoto Protocol.”⁵⁰

- The Japanese and EU approaches might lead to a replacement of national emission reduction targets for all developed countries in favour of sectoral targets.

These concerns of developing countries in relation to the sectoral approach as proposed by Japan and the EU are clearly captured in their various submissions and proposals. They have stressed, for example, that any discussion on sectoral approaches should not:

- replace legally binding absolute emission reduction targets for all Annex I Parties;⁵¹
- lead to global standards or benchmarks with respect to covered sectors;⁵²
- lead to emissions targets for developing countries;⁵³
- result in trade barriers or punitive trade measures;⁵⁴
- lead to the application of inappropriate standards for developing countries;⁵⁵
- lead to unjustifiable discrimination or disguised restriction to the international trade of non-Annex I Parties.⁵⁶

Instead, for developing countries, the discussion on enhancing the implementation of UNFCCC Art. 4.1(c) in relation to sector-specific actions must be focused on promoting the development, deployment, diffusion and transfer of technology and of enhancing sectoral cooperative actions.⁵⁷

E. Emissions trading and the Clean Development Mechanism

Emissions trading⁵⁸ is perceived in many developed countries to be the optimum market-based for GHG emitters at the firm or industry-level to achieve emission reductions at lowest-cost and allows countries to limit national aggregate emissions, in theory, to the level of specified national emissions caps. Emissions trading regimes

⁵⁰ Id.

⁵¹ G77 and China, in the sectoral workshop, at http://unfccc.int/meetings/adhoc_working_groups/lca/items/4491.php

⁵² China, in FCCC/AWGLCA/2008/MISC.5

⁵³ Indonesia, in FCCC/AWGLCA/2008/MISC.4/Add.1; China, in FCCC/AWGLCA/2008/MISC.5

⁵⁴ China, in the sectoral workshop, at http://unfccc.int/meetings/adhoc_working_groups/lca/items/4491.php

⁵⁵ AOSIS, in FCCC/AWGLCA/2008/MISC.5/Add.2; AOSIS and China, in the sectoral workshop, at http://unfccc.int/meetings/adhoc_working_groups/lca/items/4491.php

⁵⁶ Indonesia, in FCCC/AWGLCA/2008/MISC.4/Add.1

⁵⁷ See e.g. China, in FCCC/AWGLCA/2008/MISC.1; G77 and China, and Saudi Arabia, in the sectoral workshop, http://unfccc.int/meetings/adhoc_working_groups/lca/items/4491.php

⁵⁸ Emissions trading is the purchasing and selling of quantified rights to emit specific amounts of GHGs (typically in terms of tons of carbon dioxide equivalent – CO₂eq).

are “already widespread across OECD countries”⁵⁹ with the European Union foremost in their use.⁶⁰

Such trading is linked to the setting of emissions “caps” – i.e. the maximum amount of GHG emissions that can be made by GHG emitters (typically industries, firms, or factories) which in turn is determined by national emissions caps set by individual governments. This system is often called “cap-and-trade” – i.e. placing a limit on the amount of emissions that can be produced and then issuing (either for free or for purchase or auction) permits to emit GHGs. Through emissions trading, GHG emitters who are unable to limit their emissions to levels below their allowed emission rights can offset their excess emissions by buying surplus emission rights from those GHG emitters whose emissions were below their emissions allowances. This basically means that, rather than investing and spending more on emissions abatement technology to further reduce emissions, GHG excess emitters can instead purchase additional emission rights from the emissions trading market (on the assumption that such additional emission rights would be available for purchase).

Reinaud points out that “the vast majority of allowances under existing ETS [emissions trading systems] are currently distributed free to trade-exposed sectors” (such as cement, iron and steel, aluminium, chemicals), on the basis of the application of both eligibility criteria and distribution formulae.⁶¹ The definition of both the eligibility criteria to be able to receive emission rights and the formulae for the distribution of such emission rights often involves a political and policy-driven process. That is, both the criteria and the distribution formulae depend on governments’ political and policy assessment of, inter alia: the level of the national emissions cap that underlies the ETS (and thus the amount of emission rights that can be allocated and, ultimately, traded under that cap); and the industrial sectors and the emitters therein that would benefit from emission allowances (or that should be kept “competitive” with their non-carbon constrained competitors by effectively subsidizing the emitters’ cost of compliance with emission limits through the free allocation of emission rights).

Emissions trading, in short, cannot be divorced from the political and policy pressures and considerations that governments have in the context of effecting emission

⁵⁹ Julia Reinaud, *Trade, Competitiveness and Carbon Leakage: Challenges and Opportunities* (Chatham House Energy, Environment and Development Programme Paper 09/01, January 2009), p. 3. (hereafter *Reinaud Trade and Competitiveness*)

⁶⁰ See e.g. UNFCCC, *Compilation and synthesis of supplementary information incorporated in fourth national communications submitted in accordance with Article 7, paragraph 2, of the Kyoto Protocol*, FCCC/SBI/2006/INF.2, 22 November 2007, para. 30, stating that “tradable emissions allowances, used primarily in the EC member states, are currently the premier instrument for reducing CO₂ emissions from energy production and use. The EU ETS is the centrepiece of the strategy of the EC to meet its emissions commitment under the Kyoto Protocol. In its first trading period, 2005–2007, the EU ETS covers the CO₂ emissions of about 11,000 installations, which account for about 47 per cent of total CO₂ emissions from the EC. The second phase and subsequent five-year trading periods may include additional sectors and non-CO₂ GHGs. The EC has proposed including aviation in EU ETS as from 2011. Norway has established an emissions trading system, which has for the most part the same features as the EU scheme. Emissions trading systems are also under consideration in Canada, Japan, New Zealand and Switzerland. (Finland, EU ETS, 5.9 TgCO₂, 34.4%; France, EU ETS, 3.2 TgCO₂, 2.9%; Netherlands, EU ETS, 1.4 TgCO₂, 15.5%; Slovakia, EU ETS, 0.8 TgCO₂, 76.2%; United Kingdom, EU ETS, 11.0–29.3 TgCO₂, 10.3–23.2%.)”

⁶¹ *Reinaud Trade and Competitiveness*, supra, p. 11.

reductions.⁶² In and of itself, for example, the effectiveness of the current model in existing ETSs under which emission rights are distributed free to emitters in terms of limiting carbon leakage is “rather uncertain and will depend on the cap and the mode of allocation.”⁶³ Reinaud suggests that for free allocation-based ETSs to be effective in addressing competitiveness and carbon leakage concerns, they will “require the implementation of a comprehensive policy portfolio, not only to ensure that the wide range of leakage concerns is effectively addressed ... but also to provide a tailored solution that is suited to different sectors ...”⁶⁴

This suggests, then, that the insistence by developed countries on emissions trading as a primary mechanism for achieving emissions reductions (for example, in the context of the on-going UNFCCC negotiations under the Bali Action Plan) might be misplaced in terms of effectiveness because emissions trading cannot be a one-size-fits-all solution as well as in terms of its role under the Kyoto Protocol. It has to be tailored as a part, rather than the main component, of a broader policy mix, backed up by political will, that would require domestic industries and GHG emitters to cut emissions, shifts production and consumption patterns to low-carbon sectors and activities, and invests in “greener” economic activities rather than continuing to support GHG-emitting ones.

Finally, emissions trading cannot be divorced from the GHG emission reduction commitments that developed countries have to agree to and comply with under the Kyoto Protocol. Much of the emission allowances that can be traded will come from the Certified Emission Reductions (CERs) that can be generated from projects implemented under the Kyoto Protocol’s Clean Development Mechanism (CDM).

The Clean Development Mechanism (CDM) is one of three flexibility mechanisms under the KP that participating countries can use to meet their GHG reduction targets.⁶⁵ It is the only mechanism that involves developing countries. Under Art. 12 of the KP, the CDM is a mechanism under which developing countries assist developed country Parties to the KP to comply with their quantified emission limitation and reduction commitments under the KP, through project activities in developing countries, allowing these countries to pursue sustainable development and contribute to achieving the ultimate objective of the Convention. The CERs from CDM project activities could then be added to the assigned amount of the developed country Party, allowing it to achieve compliance with part of its KP emission reduction commitments. The financial resources and whatever technology transfer to developing countries through CDM projects are, therefore, payments to developing countries for the CERs that will be credited to developed country Parties, and therefore cannot be considered donor funding of projects in developing countries.

⁶² For example, Cosbey and Tarasofsky cite the political pressures exerted by industry actors in shaping the National Allocation Plans (NAPs) under the EU’s ETS. See Aaron Cosbey and Richard Tarasofsky, *Climate Change, Competitiveness and Trade: A Chatham House Report* (May 2007), pp. 9-10. See also Michelle Chan, *Subprime Carbon? Re-thinking the world’s largest new derivatives market*, *Friends of the Earth*, March 2009, p. 9 (hereafter Chan)

⁶³ Reinaud *Trade and Competitiveness*, *supra*, p. 13.

⁶⁴ *Id.*

⁶⁵ The other mechanisms are Joint Implementation whereby developed countries receive credit for investing in GHG reductions in other developed countries and Emissions Trading, whereby emitters purchase carbon credits as a market commodity

The use of the CDM (and the other KP flexibility mechanisms) by developed countries in order to meet their KP mitigation targets should only be supplementary to their domestic emission reduction actions.⁶⁶ From the 2% share of the proceeds of the sale of CERs derived from CDM projects in developing countries, developing country Parties have agreed to set up a solidarity fund – the Adaptation Fund – which can be used to support adaptation actions in other developing countries. In short, the Adaptation Fund is not a traditional donor-recipient oriented fund but rather is a South-South solidarity fund.

Developing countries have many concerns that need to be addressed in relation to the CDM and its effectiveness (including the use of CERs in carbon trading) in helping countries address climate change, including:

- ensuring that carbon trading prices are not speculative – i.e. they should be based on exact measurements of emissions globally;⁶⁷
- having a globally-agreed regulatory framework to govern carbon markets so as to prevent carbon traders from engaging in excessive risk taking similar to what happened with sub-prime mortgages and derivative financial instruments in the United States⁶⁸;
- the continued use of KP flexibility mechanisms such as the CDM should not displace domestic reduction actions in developed countries and result in a focus primarily on the least expensive mitigation activities in developing countries;⁶⁹
- there must be proof of additionality – i.e. that the CDM project activities result in GHG emission reductions that would not have occurred otherwise.

Operationally, the CDM also needs to be re-tooled in order to make it more useful for developing countries. For example, access to and geographical distribution of CDM projects has to be made equitable. The modalities for project approval and fund disbursement under the CDM need to be improved, project ownership by developing countries ensured, and consistency with host countries' development objectives enhanced. CDM modalities must ensure that actual and operational transfer of technologies (both hardware and know-how) to developing countries hosting CDM projects take place.

⁶⁶ Paragraph 1 of Decision 2/CMP.1 stressed that “the use of the mechanisms (Joint Implementation, CDM, Emissions Trading) shall be supplemental to domestic action and that domestic action shall thus constitute a significant element of the effort made by each Party included in Annex I to meet its quantified emission limitation and reduction commitments”. In interpreting the above paragraph, then, the mechanisms under the Kyoto Protocol simply ‘enhance or complete’ developed country Parties’ domestic emission reduction activities, instead of constituting the bulk of these actions. The use of the CDM is secondary to the conduct of domestic reductions by developed countries to comply with their Kyoto Protocol commitments. All Kyoto Protocol mechanisms (including JI and Emissions Trading) cannot be the primary sources for emission reductions.

⁶⁷ But for such measurements to be had, developed countries must first comply with their obligation under Art. 4.3 of the UNFCCC to pay for the “agreed full costs” needed by developing countries to prepare their national GHG inventories as part of their national communications under Art. 12.1 of the UNFCCC.

⁶⁸ See e.g. Chan, *supra*.

⁶⁹ See e.g. Argentina, in FCCC/AWGLCA/2008/MISC.5

Finally, developed countries must commit to substantially deeper emission reduction targets. Emissions trading, the viability of the CDM as a mechanism for generating tradable CERs, and the effective trading price for such CERs, all depend on the extent to which developed country Parties to the KP commit to substantial and much deeper quantified emission limitation and reduction targets for the period after 2012. Deeper cuts by developed country Parties will drive up the value of each CER as there will be more demand for the CERs, whereas less ambitious cuts – such as those suggested by the EU and other developed countries in the context of the KP negotiations – will less demand for CERs, and thus lower prices. Hence, if Parties wish to see the CDM become more effective and able to generate additional revenue, an essential precondition will be for developed country Parties to the KP, in the on-going KP Art. 3.9 negotiations of the AWG-KP, to agree to deep and substantial cuts in emissions for the second commitment period post-2012.

F. Carbon-based border adjustment measures

Energy-intensive industries in developed countries⁷⁰ have, over the 1990s, become subject to carbon taxes and higher energy efficiency standards. Because these industries from developed countries are then required to put in place more costly carbon pollution reduction or mitigation technologies at their plants, or are subject to carbon-based taxes, it is argued that the production costs for their products become higher and therefore less competitive in trade terms when compared to similar products from developing country producers that are not subject to the same taxes or standards.

But as pointed out by a UNFCCC secretariat report, “[g]enerally, a range of exemptions exists in the coverage of CO₂ or energy taxes, especially for energy-intensive industries. Beyond broad exemptions, many countries adjust or exempt companies that are participating in climate change VAs for CO₂ or energy taxes (e.g. the Netherlands, Norway, the United Kingdom). The Netherlands and Belgium also provide tax deductions and targeted subsidies for climate-friendly energy investments, across all energy end-use sectors except transport.”⁷¹ Hence, the potential adverse trade competitiveness impacts – i.e. becoming less competitive vis-à-vis non-carbon constrained competitors – of the energy-intensive industry subject to the carbon-based tax often gets mitigated due to tax exemptions or the recycling of tax revenues into industry subsidies. This was alluded to by the UNFCCC secretariat:

28. As currently applied, carbon taxes influence most directly the electricity generation sector and the residential, commercial and public sectors. These are sectors where compliance costs are either relatively low or can be passed on to consumers, and thus the taxes do not greatly influence the sectors’ international competitiveness. For the industrial sector, especially energy-intensive

⁷⁰ As of 2004, ten (10) developed countries impose carbon-based taxes as cornerstones of their climate policy. These include Denmark, Finland, Germany, Liechtenstein, the Netherlands, Norway, Slovenia, Sweden, Switzerland, and the United Kingdom. The rates of the taxes are typically EUR 7–13 per tonne of CO₂, but can be as high as EUR 42 per tonne of CO₂ in some cases. See UNFCCC, Compilation and synthesis of supplementary information incorporated in fourth national communications submitted in accordance with Article 7, paragraph 2, of the Kyoto Protocol, FCCC/SBI/2006/INF.2, 22 November 2007, para. 27.

⁷¹ UNFCCC, Synthesis of reports demonstrating progress in accordance with Article 3, paragraph 2, of the Kyoto Protocol, FCCC/SBI/2006/INF.2, 9 May 2006, para. 19.

subsectors exposed to trade, the influence of carbon and energy taxes is more indirect. Unconditional exemptions, exemptions tied to emission reduction performance or opportunities to obtain subsidies for emission reduction projects are often accorded to the industrial sector. In some Parties, the threat of being assessed for taxes leads industrial firms to participate in voluntary sectoral commitments in order to reduce their emissions (United Kingdom Climate Change Agreements); in other Parties, the taxes are recycled back to industry as subsidies for emission reduction measures (Denmark).⁷²

Nevertheless, although the competitiveness impacts of domestic carbon-based taxation and regulation in developed countries on their energy-intensive industries may in most cases not be significant or are indirect and oftentimes mitigated by exemptions or subsidies, developed countries still seek to address perceived adverse competitiveness impacts arising from asymmetrical carbon-based taxation and regulation.

There are now suggestions in developed countries to impose carbon-based taxes, including border tax adjustment measures, on products imported from developing countries on the argument that such products are artificially cheaper and hence more competitive than similar products produced by developed countries because developing country producers are able to utilize less costly but higher carbon emitting production processes and methods for such products.⁷³

A more detailed legislative proposal for carbon-based border adjustment measures to address competitiveness and carbon leakage concerns has recently appeared in Secs. 401 to 413 of draft “American Clean Energy and Security Act of 2009” authored by US Representatives Henry Waxman (D-CA) and Edward Markey (D-MA). Under this bill, owners or operators of a GHG-emitting entity (e.g. an iron or steel factory or chemical plant) that are under sectors that meet certain energy or GHG intensity thresholds (“at least 5 percent”) and a trade intensity threshold (“at least 15 percent”) can obtain monetary rebates from the US government as compensation “for the costs of directly or indirectly purchasing emission allowances needed”⁷⁴ for them to comply with GHG emission restrictions under the bill.⁷⁵ In effect, under the bill, the US government would subsidize the compliance costs of US industrial sectors that

⁷² UNFCCC, Compilation and synthesis of supplementary information incorporated in fourth national communications submitted in accordance with Article 7, paragraph 2, of the Kyoto Protocol, FCCC/SBI/2006/INF.2, 22 November 2007, para. 28.

⁷³ For example, in November 2006, then-French Prime Minister Dominique de Villepin suggested that countries “do not sign up to a post-2012 international treaty on climate change could potentially face extra tariffs on their industrial exports.” This suggestion was opposed by the European Commission, citing potential conflicts with WTO rules. See Businessweek, “Global Warming Wars: EU Takes on France’s Carbon Tax Plan”, 18 December 2006, at http://www.businessweek.com/globalbiz/content/dec2006/gb20061218_681124.htm?chan=top+news_top+news+index_global+business. Such suggestions were reiterated by then-French President Jacques Chirac in January 2007 and by current French President Nicolas Sarkozy in November 2007. In early 2008, the European Commission discussed proposals that would impose a de facto carbon tax on imports by requiring companies importing goods into the European Union from countries that do not similarly restrict greenhouse gas emissions to first buy EU emissions permits. See Reuters, “EU considers carbon tariff”, 4 January 2008, at <http://www.reuters.com/article/environmentNews/idUSL0464478420080106?sp=true>.

⁷⁴ Sec. 401(4) of the Waxman-Markey draft.

⁷⁵ Sec. 403(a)(1) of the Waxman-Markey draft.

may suffer adverse trade competitiveness impacts as a result of more stringent US GHG emission regulations.

Furthermore, unless “international reserve allowances” to cover such goods to be imported are first purchased by the importer,⁷⁶ the bill would also prohibit the importation into the United States of “iron, steel, steel mill products (including pipe and tube), aluminum, cement, glass (including flat, container, and specialty glass and fiberglass), pulp, paper, chemicals, and industrial ceramics; and ... any other manufactured product that -- (i) is sold in bulk for purposes of further manufacture or inclusion in a finished product; and (ii) generates, in the course of the manufacture of the product, direct green house gas emissions or indirect greenhouse gas emissions that are comparable (on an emissions-per-output basis) to emissions generated in the manufacture of” iron, steel, steel mill products (including pipe and tube), aluminum, cement, glass (including flat, container, and specialty glass and fiberglass), pulp, paper, chemicals, and industrial ceramics.⁷⁷ This is essentially a carbon-based border adjustment tax and would effectively increase the cost of imports and in consequence reduce the trade competitiveness of exporters of the goods covered by the international reserve allowance programme.

In short, under the Waxman-Markey bill, to address carbon leakage and competitiveness concerns by the US iron and steel, aluminium, cement, glass, pulp and paper, chemical, industrial ceramics, and automobile industries, among others, the US government would:⁷⁸

- (i) compensate – i.e. subsidize – the costs incurred by these industries for complying with more stringent US GHG emission targets;⁷⁹ and
- (ii) raise de facto trade barriers (in the form of the requirement to purchase international reserve allowances as a condition for importation) to products from other countries, including developing countries,⁸⁰ that would compete with the goods produced by these US industries in violation of WTO rules⁸¹

⁷⁶ Sec. 415 in relation to Sec. 416(a)(1) of the Waxman-Markey bill.

⁷⁷ Sec. 411(3)(A) and (B) in relation to Sec. 415 of the Waxman-Markey bill.

⁷⁸ It should be noted, however, that the Obama administration has officially stated that it believes that “the best approach to address carbon leakage concerns is to negotiate a new international climate change agreement in the United Nations that ensures that all major emitters take long term, significant action to reduce their greenhouse gas emissions” and that it “does not support any specific measures, including border measures, at this time.” See Letter of USTR Ronald Kirk to US Representative Joe Barton, House Committee on Energy and Commerce, 14 April 2009, available at <http://ictsd.net/downloads/2009/04/kirk-letter-14-04-09.pdf>.

⁷⁹ This subsidy could conceivably be a prohibited subsidy under the WTO Subsidies and Countervailing Measures Agreement, considering that export performance is one of the factors for determining eligibility for the rebates. See Sec. 403(b)(2)(B), Sec. 403(b)(2)(C)(i)(2), and Sec. 403(b)(4)(iii) of the Waxman-Markey draft.

⁸⁰ However, Sec. 416(a)(1)(C)(i) and (ii) of the Waxman-Markey bill allows the US government to exempt from the international reserve allowance purchase requirement the importation of goods produced in “foreign countries that the United Nations has identified as among the least developed of developing countries; or ... foreign countries ... determined to be responsible for less than 0.5 percent of total global greenhouse gas emissions.”

⁸¹ Provisions of the WTO 1994 General Agreement on Tariffs and Trade that prohibit indirect taxes on an input fully consumed during the production process could possibly be violated. See e.g. Art. II:1 and 2 of the GATT 1994. For a discussion, see e.g. Cosby and Tarasofsky, *supra*, pp. 19-20. See also Aaron Cosby, *Border Carbon Adjustment: Background Paper to the June 2008 Copenhagen*

However, Reinaud suggests that addressing carbon competitiveness concerns using a system of border adjustment measures may not necessarily be effective, especially in light of the “administrative requirements, costs and technical practicality” of border adjustments that serve as the “greatest barriers to their implementation.”⁸² Cosbey has also pointed out some of the legal, effectiveness and administrative feasibility aspects that need to be addressed with respect to border adjustment measures.⁸³ That is, imposing such measures might not even be effective in terms of meeting any objective they might have of getting other countries to adopt more stringent carbon emission regulations – especially if the trade flows of the countries concerned with respect to the products covered by the measures are not large or significant to the exporting country.⁸⁴

On the other hand, the World Bank modeled the competitiveness effect of such measures when imposed by importing countries and concluded that these would have adverse effects on the competitiveness of exporting countries – i.e. there would be “marginally significant” decreases in trade.⁸⁵ Applied with respect to trade between an importing developed country and an exporting developing country, this conclusion would therefore imply that carbon taxes imposed by a developed country on imported goods reduces to some extent the export opportunities of the exporting developing country with respect to such goods.

The potential of having their exports be discriminated against and suffer adversely as a result of such subsidies and border measures in the name of climate change raises deep concerns among developing countries. For many of them, the ability to access developed country markets for their exported goods and services remains a major component in their development strategy, and hence carbon-based border adjustment measures are likely to be seen as disguised protectionist measures that would arguably be contrary to UNFCCC Art. 3.5. Hence, limitations on such access for their exports will have adverse implications on the extent to which developing countries will be able support development, not least in terms of being able to generate trade-derived capital surpluses to invest domestically in building up improved development-oriented physical, human and financial infrastructures.

These concerns of developing countries with respect to the impact of such measures on their exports and on these measures as being disguised protectionism give rise to a serious political consideration in the context of the on-going UNFCCC negotiations

International Trade and Climate Change Seminar, August 2008, pp. 3-4, with respect to the legal aspects of a border carbon adjustment. (hereafter Cosbey). See also Matthew Stilwell, *New Challenges of Global Governance: Managing International Trade and Climate Change* (2008), at http://www.envirosecurity.org/activities/diplomacy/gfsp/theperfectstorm/Stilwell_CCandTrade.pdf, stating that “[t]he WTO permissibility of these measures remains to be seen, and will depend on factors including: a) the existence of prior, goodfaith, across-the-board negotiations; b) tailoring of measures to different situations in different countries; c) the transparency, predictability and fairness of procedures; and d) whether the measures are otherwise arbitrary or unjustifiable in light of WTO rules interpreted in light of relevant international obligations – including those under the Climate Convention or Kyoto Protocol.

⁸² Reinaud Trade and Competitiveness, *supra*, pp. 14-16.

⁸³ Cosbey, *supra*.

⁸⁴ This was alluded to by Cosbey, *supra*, pp. 2-3, 5-6.

⁸⁵ WB Trade and Climate, *supra*, pp. 27-29, and appendix 4.

under the Bali Action Plan. The imposition of such measures by developed countries is likely to be seen, inter alia:

- as an attempt to extra-territorially enforce developed countries' carbon emission standards onto developing countries' products and production processes even when the latter do not have the finance nor technology to effectively adopt and comply with such standards;
- as an attempt to penalize developing countries, through their exports, for not undertaking emission reduction commitments or targets;
- as an attempt to prevent developing countries from their achieving development objectives (resulting in a "lock-in" of poverty) in part by limiting export opportunities;
- as an attempt to further tilt an already unequal playing field in terms of both trade and economic relations further against developing countries; and
- as non-compliance by developed countries with their treaty commitments under both the UNFCCC (Art. 3.5) and the WTO not to engage in arbitrary or unjustifiable discrimination or disguised restrictions on the trade of developing countries.

Such measures do not, therefore, send a positive political signal on the part of developed countries to engage and negotiate with developing countries in good faith in the UNFCCC negotiations.⁸⁶ These could have detrimental effects on the ability of UNFCCC Parties to engage constructively with each other with arriving at an agreed outcome at the conclusion of the process under the Bali Action Plan. Border adjustment measures are likely to be highly politically divisive.

V. Carbon leakage – developing country perspectives on competitiveness

The issue of "carbon leakage" – i.e. a relocation of carbon-intensive industries from countries with stringent climate change-related rules (such as GHG emission restrictions leading to lower emissions) to countries with less stringent rules or

⁸⁶ See for example Cosby's discussion of the negative "vitriolic" reaction of developing countries to the US imposition of a border adjustment measure in the Shrimp-Turtle case, in Cosby, *supra*, pp. 6-7. Recent suggestions from US and European officials, such as US Energy Secretary Steven Chu and French President Sarkozy, on the possibility of the US and the EU imposing carbon-based border adjustment measures also met with strong reactions from big developing countries such as China and India. For example, India's Special Envoy on Climate Change, Mr. Shyam Saran, recently stated that doors "should not open ... for protectionism under [the] green label. That is something which would be a very negative development." The lead Chinese climate negotiator, Mr. Su Wei of China's National Development and Reform Commission (NDRC), also recently stated that "[i]f there's going to be a border tax imposed [by developed countries], that would very much have the danger of triggering a trade war ... That's not something that we would be happy to see." In similar vein, the vice-minister of China's NDRC, Mr. Xie Zhenhua, stressed that "I oppose using climate change as an excuse to practice trade protectionism." These quotes are based on the following news reports: The Economic Times, India opposes protectionism under green label, 25 March 2009, at <http://economictimes.indiatimes.com/News/India-opposes-protectionism-under-green-label/articleshow/4312219.cms>; AFP, India warns against 'green protectionism', 24 March 2009, at http://www.google.com/hostednews/afp/article/ALeqM5j9SQXvBuulBta_Tfxt9bSgDyItZg; Thanh Nien News, Western climate-change policies risk protectionism: China, India, 7 April 2009, at <http://www.thanhniennews.com/worlds/?catid=9&newsid=47729>; China Daily, Emission tariff proposal rapped, 20 March 2009, at http://www.chinadaily.com.cn/bizchina/2009-03/20/content_7598016.htm

without such rules (leading to increased emissions) – has been flagged as a major policy issue that needs to be addressed in order to ensure the environmental integrity of climate change actions.⁸⁷ It is suggested that “uneven carbon constraints (e.g. in Europe) would enhance the competitiveness (i.e. international market share – exports and imports – and profit levels) of non-carbon-constrained producers (e.g. in China). The implied higher carbon costs associated with energy-intensive industries within the constrained region would create incentives for those industries either to source carbon-intensive inputs from the unconstrained region and/or to relocate.”⁸⁸ Such a preference for inputs from developing countries, or the relocation of industries from the EU or the US to developing countries like China or India, it is argued, would have implications on the overall competitiveness of developed countries’ industries.

The argument is then made that to prevent carbon leakage, a “global cap-and-trade regime” should be created that is “as inclusive as possible. The more countries – particularly all major economies – participate under the same constraints, the less scope for carbon leakage and competitiveness concerns.”⁸⁹ The problem with this argument is that it assumes that developed and developing countries are equally competitive under all conditions. Such an assumption simply is not true. Developed countries, by and large, continue to be more competitive in global trade in manufactured products relative to their developing country counterparts.

Carbon leakage issues must first be contextualized in terms of which industries in developed countries would be more vulnerable to leakage. As the World Bank has pointed out, “most emissions in industrialized countries result from inherently domestic activities such as transportation, heating, cooling, lighting, and other such activities, where leakage is either difficult or impossible. On the other hand, for energy-intensive industries such as cement, chemicals, and others, international competitiveness is an important concern.”⁹⁰

The key question is whether such concerns over carbon leakage is well-founded based on historical experience.⁹¹ In modeling done by the World Bank on imports and exports of energy-intensive products, it suggests that there is “some evidence – although not very pronounced – of leakage of carbon- and energy-intensive industries to developing economies that could be attributed to more stringent climate change policies and energy efficiency standards.”⁹² But the World Bank also hastens to add that such findings are neither conclusive nor very precise, and points out further that “developing countries continue to be net importers of energy-intensive products”⁹³ although there are some indications that there could be an increased concentration of

⁸⁷ Cosbey and Tarasofsky describe this as “the chain of events whereby greenhouse gas-producing activity simply shifts from a regulated jurisdiction to an unregulated one.” See Cosbey and Tarasofsky, *supra*, p. 4.

⁸⁸ Reinaud Trade and Competitiveness, *supra*, p. 6. This is the “non-Party problem” in relation to competitiveness concerns that Cosbey and Tarasofsky discuss in their report, see Cosbey and Tarasofsky, *supra*, p. 4.

⁸⁹ Reinaud Trade and Competitiveness, *supra*, p. 7.

⁹⁰ WB Trade and Climate, *supra* p. 30. These energy-intensive industries include pulp and paper, industrial chemicals, iron and steel, nonmetallic mineral products, and nonferrous metals.

⁹¹ A close analog to the carbon leakage debate is the pollution haven debate that dominated environmental policy discussions in the 1990s.

⁹² WB Trade and Climate, *supra*, p. 34.

⁹³ *Id.*, p. 34.

energy-intensive industries in developing countries as these countries continue to grow.⁹⁴

In a survey of studies that have sought to identify the firm-level relocation effect of environmental regulations – i.e. the pollution haven theory – which could be considered analogous to the issue of carbon leakage, Cosbey and Tarasofsky concluded that “the literature on pollution havens is instructive in demonstrating that competitiveness concerns are an issue in the non-Party context: that the cost of environmental regulations can matter for some firms and sectors, but not usually enough to induce leakage. For most firms and sectors, the impacts are moderate, but for some – dictated by characteristics specific to the sector – impacts can be high enough to warrant concern.”⁹⁵

However, it should be stressed that studies showing leakage effects are not necessarily conclusive. There are methodological difficulties in isolating and establishing the direct causality between climate policies and carbon leakage since there are other factors that do influence firms’ relocation and investment decisions (such as availability of land and raw materials, market potential, political stability, etc.), which could mean that the leakage might not actually be due to the stringency of climate/environmental regulations but rather due to other factors such as other regulatory policies or even broader economic, development, environmental or social policies.⁹⁶

It is important also to note that the industrial sectors that are seen to be vulnerable to carbon leakage issues are limited. It is generally only in a few energy-intensive industries that the issue of “carbon leakage” is likely to be very important rather than with respect to developed countries’ economies as a whole. As Reinaud points out, concerns and risks relating to “carbon leakage” “are restricted to cement and clinker kilns, refineries, primary aluminium smelters, integrated steel mills, electric arc furnace ovens, chemicals, etc. Furthermore, their share in some OECD countries’ GDP (i.e. the UK and Germany) is small, and costs as a percentage of revenue or value added are modest for commodities whose emissions costs represent more than 4% of the products’ value.”⁹⁷

Additionally, by and large, developed countries continue to be the main producers and exporters of products from such energy-intensive industries – with shares in global exports of more than 60 to more than 80 per cent in iron and steel, chemicals, and automotive products (or around 65 per cent of world trade in manufactured exports as of 2007). Developed countries continued to account for a dominant share of such exports over the past 50 years, especially for automotive products and chemicals

⁹⁴ Id, p. 34.

⁹⁵ Cosbey and Tarasofsky, *supra*, p. 8.

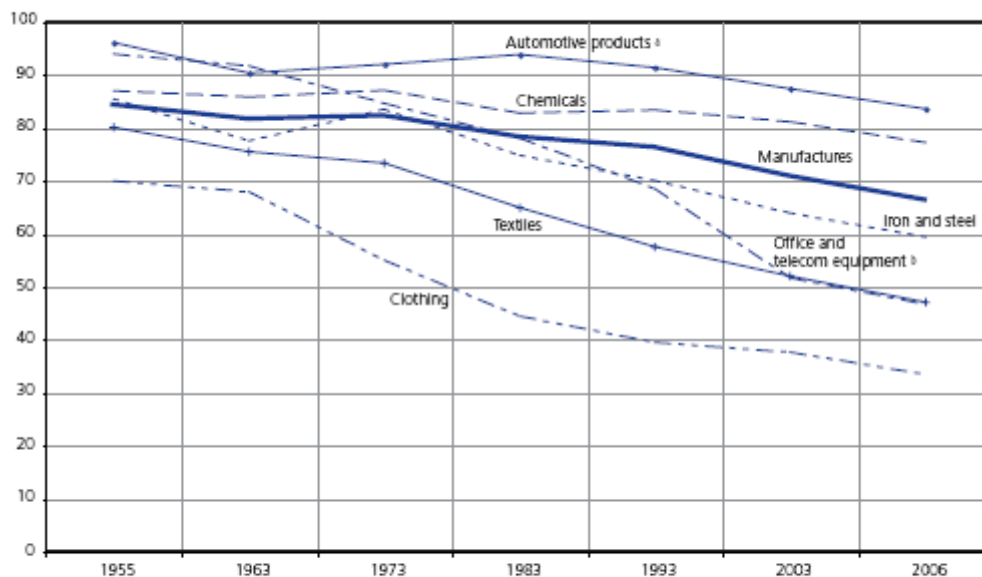
⁹⁶ For example, pollution haven studies have noted that “pollution abatement costs inherent in stringent regulations are not as significant as a host of other determining factors: access to markets (the primary driver in most studies), labour costs, access to resources and other such variables.” Cosbey and Tarasofsky, *supra*, p. 7.

⁹⁷ Reinaud Trade and Competitiveness, *supra*, p. 7. See also Julia Reinaud, *Industrial Competitiveness under the EU Emissions Trading Scheme* (International Energy Agency, 2005), which found that the competitiveness effects of the European Union’s Emissions Trading Scheme (ETS) on the steel, pulp and paper, cement and aluminium industrial sectors, were minimal.

though less so with respect to iron and steel.⁹⁸ Developing country exporters of manufactured products have started gaining major shares in global trade, although such products have tended to be lower-value-added (mostly clothing and textiles and office and telecommunication equipment) (see Figure 3), and even then, as UNCTAD has pointed out, “between 2004 and 2007, developing countries classified as exporters of manufactures suffered losses from changes in their terms of trade equivalent to almost 1 per cent of GDP per year.”⁹⁹

Figure 3

Share of industrial countries in world manufactures exports by product group, 1955-2006
(Percentage)



^a Road motor vehicles for the years 1955-73.

^b Break in time series between 1973 and 1983.

Note: EU(15) before 2003 and afterwards EU(25).

Source: GATT, *Networks of World Trade*, 1978 for the years 1955-73 and GATT, *International Trade* 1985 for the year 1983, and WTO, SDB for the years 1993-2006.

Source: WTO, *World Trade Report* 2008, p. 18

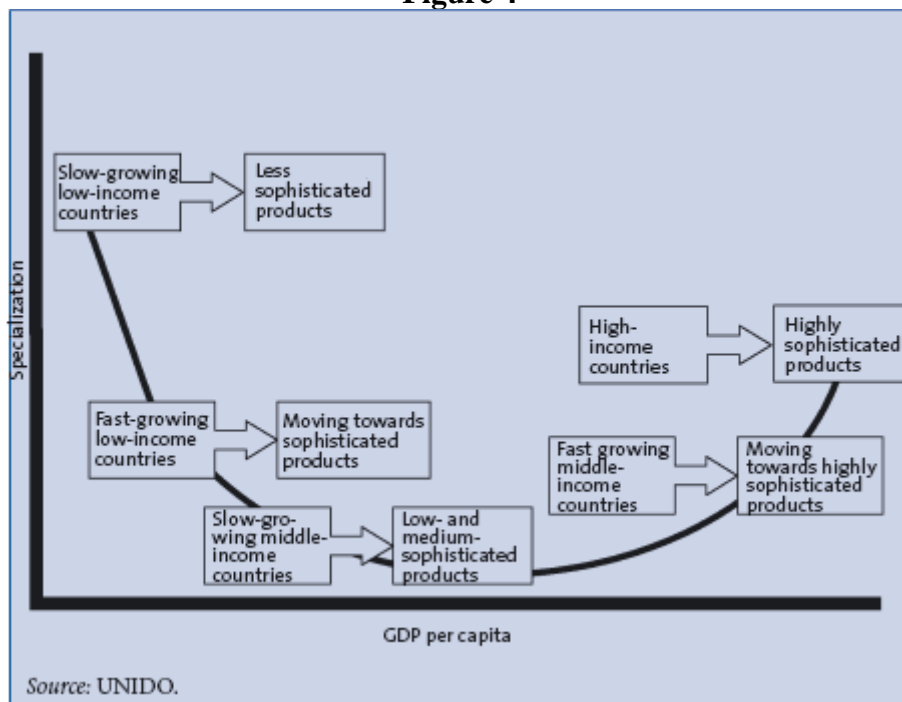
The primary concern here is that the energy-intensive industries in developing countries such as China, India, Brazil and South Africa would be able to gain a competitive edge (in terms of the output price of the goods produced) over their developed country counterparts as a result of the former not having to meet or comply with the strict GHG emissions standards or caps that the latter would be subject to (along with the associated higher costs for production that such compliance may entail). Developed countries, in raising the issue of carbon leakage, seek to ensure that they continue to maintain their trade competitive edge with respect to high-value-added and energy-intensive manufactured products, and prevent or limit erosion of such edge to developing countries in order to avoid decreased trade shares and potentially associated job losses in developed countries.

⁹⁸ WTO, *World Trade Report* 2008, pp. 17-18.

⁹⁹ UNCTAD, *Trade and Development Report* 2008, p. 29. Generally, only developing countries that are exporters of oil and mining products made significant gains in their terms of trade due to the commodity price boom that occurred in recent years. However, as the UNDESA points out, such gains were reversed as oil and primary commodity prices fell in the second half of 2008, especially affecting the oil and commodity exporters of North and sub-Saharan Africa, the CIS, West Asia, and least-developed countries. See UNDESA, *World Economic and Social Prospects* 2009, p. 36.

Considering that these industrial sectors – especially iron and steel, cement, chemicals – form the backbone for industrial diversification and the development of a manufacturing base for higher-value added products in order to generate higher rates of growth and development (see Figure 4 below)¹⁰⁰, developed countries’ concerns about carbon leakage gets translated among developing countries into concern that these could be used to “lock-in” developing countries into their current development stage by preventing them from industrializing by developing and diversifying into industrial and manufacturing economic sectors.

Figure 4



Source: UNIDO, Industrial Development Report 2009, Figure 2.4, p. 18

VI. Conclusion

As stressed in Art. 4.7 of the UNFCCC, in implementing climate change-related actions, the first and overriding priority of developing countries is economic and social development and poverty eradication. This priority underlines, shapes, and influences developing country perspectives, positions and actions on climate change. Initiatives, proposals, or suggestions that may adversely impact on the ability of developing countries to promote and achieve their development objectives would, hence, be reacted to negatively. This would include, inter alia, those suggestions or proposals that can be seen as affecting the ability of developing countries to improve their level of economic diversification and industrialization, including through the development of strong and diversified export and manufacturing sectors.

¹⁰⁰ In its 2009 report on industrial development UNIDO has pointed out that “both diversity and sophistication in industry are drivers of faster growth.” See e.g. UNIDO, Industrial Development Report 2009, p. 17.

The key point that needs to be stressed here is that for developing countries, a deeply held understanding, which itself is founded on the UNFCCC, is that achieving sustainable development – i.e. the achievement of economic levels sufficient to provide a decent and dignified quality of life for one's people with sufficient economic opportunities and choices within an environment that provides sufficient natural resources to support both the present and future population and the economy – is the best contribution that they can provide in addressing the global challenge of climate change.

Developing countries are also cognizant of the fact that addressing climate change will require that they also undertake appropriate actions that are consistent with their sustainable development objectives in order to adapt to and help mitigate the impacts of climate change. But such recognition is also premised on the existing balance of obligations under the UNFCCC, in particular again Art. 4.7, which stresses that the extent to which developing countries implement the UNFCCC would depend on the extent to which developed countries are able to comply with their UNFCCC obligations to provide financing and technology to developing countries. This is based on the historical responsibility of developed countries for CO₂ accumulation, the differing resources and capacities between developed and developing countries, and the fact that developing countries' overriding priority in terms of allocating scarce domestic resources would be for their economic and social development and poverty eradication.

In short, the financing and technology to be provided by developed countries under the UNFCCC is a crucial prerequisite for ensuring that developing countries are able to implement the UNFCCC and are able to play a significant role in contributing to global actions against climate change.

Hence, the current negotiating process under the UNFCCC's Bali Action Plan is seen by developing countries to be about enhancing the implementation of the UNFCCC, in particular with respect to the various UNFCCC commitments of developed countries to: (i) take the lead in mitigation (Art. 4.2(a) and (b)); (ii) provide financing to developing countries (Art. 4.3); (iii) support adaptation actions in developing countries (Art. 4.4); and (iv) provide technology to countries (Art. 4.5). Such enhancements with respect to the compliance of existing commitment by developed countries would then form the foundation for enhanced implementation by developing countries of their commitments under Art. 4.1 of the UNFCCC as their contribution to global actions on climate change.

In this regard, the BAP process can be best used to address competitiveness concerns by:

- Focusing on enhancing the implementation of existing UNFCCC commitments by all Parties, especially in ensuring achievement of its Art. 2 UNFCCC objective, including sustainable development
- Focusing on ensuring a strong and operational financial and technology transfer mechanisms to support developing countries in achieving

development in ways that are adapted to, and respond to, the carbon space constraints imposed by the need to stabilize GHG emissions in ways consistent with Art. 2 UNFCCC. This would entail positive consideration of the August 2008 proposals put forward by the G77 and China on financing¹⁰¹ and technology¹⁰² mechanisms in the context of the BAP process under the AWG-LCA, as further detailed and refined by subsequent proposals and submissions from developing countries during the negotiations

Instead of imposing border adjustment measures, promoting sectoral approaches, pushing for trade liberalization of climate-friendly products of export interest to developed countries, adopting standards that may act as barriers to the exports of developing countries, developed countries should focus on implementing their UNFCCC Art. 4.3, 4.4, 4.5 and 4.7 obligations to provide financing and technology to developing countries as an essential element for addressing climate change

Additionally, developed countries should invest in and focus on changing patterns of domestic production and consumption so as to reduce their domestic emissions as substantially, rapidly and deeply as possible, consistent with their historical responsibility, the science, their UNFCCC Art. 4.2(a) commitment to take the lead in mitigation, so as to meet the objective of the UNFCCC under Art. 2. This could mean substantially re-engineering their industrial, transportation, energy, housing, and agricultural sectors so as to make these less carbon-intensive; investing in new productive and less carbon-intensive economic sectors and industries that can become globally competitive; and promoting lifestyle changes among the population.

Competitiveness concerns can also be best addressed through, for example, voluntary export taxes imposed by the developing country government on their own exports. For example, China in early 2008 raised its export taxes on its exports of steel products.¹⁰³ This could have the effect of making products subject to such export taxes less globally competitive while at the same time generate domestic revenue for the tax imposing government which could then be used to support climate change-related adaptation and/or mitigation actions.

In the ultimate analysis, issues of carbon leakage and competitiveness in the context of climate change are about how to shape and influence the long-term sustainable economic development prospects of developing countries. These are about how perspectives over the sharing of a fast diminishing global resource – the global carbon budget – get translated into economic policy responses that will impact on the ability of developing countries to provide for their people and ensure their continued economic viability.

For developing countries generally, these issues are therefore a reflection of a broader global policy debate over their role, position, and influence in global governance – including on economic, political and environmental issues – vis-à-vis developed

¹⁰¹ See Philippines on behalf of the G77 and China, in FCCC/AWGLCA/2008/MISC.2/Add.1

¹⁰² See Antigua and Barbuda on behalf of the G77 and China, in FCCC/AWGLCA/2008/MISC.5.

¹⁰³ See e.g. S. Shanker, “China hikes steel export tax by 5-15%”, The Hindu Business Line, 23 January 2008, at <http://www.thehindubusinessline.com/2008/01/03/stories/2008010352200300.htm>. See also <http://asiatax.wordpress.com/2007/12/28/china-to-raise-steel-product-export-tax-lower-high-purity-copper-export-tax/>

countries. As such, consideration of these issues of competitiveness and carbon leakage cannot be divorced from the underlying development challenges and priorities that developing countries have that need to be addressed by the global community as part of the broader global governance discourse.