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International Centre for Trade and Sustainable Development

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SUBMISSION

Information and views relating to modalities for the operationalization of a work programme and possible forum on response measures

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The International Centre for Trade and Sustainable Development (ICTSD) welcomes the opportunity to provide its views and information relating to the issue of response measures and in particular to the development and operationalization of a work programme and possible future forum**.**

Background

At the 16th Conference of the Parties (COP) in Cancun, Mexico, Parties agreed to provide a forum on the impact of the implementation of response measures. Parties agreed the forum would take place at the 34th and 35th sessions of the UNFCCC Subsidiary Bodies in June and December 2011, respectively.

During the first session of the forum held in June 2011 at the 34th session of the SBSTA and SBI, ICTSD presented a summary of trade-related, unilateral response measures that our current research and analysis indicate could have adverse impacts on the sustainable development of other countries, in particular developing countries, as introduced in a previous submission to the UNFCCC in April 2011. This current submission elaborates upon the measures previously mentioned, adds information about one more measure and provides suggestions for the elaboration of a work programme for the forum.

Potential Impacts of Certain Response Measures on Trade

Trade and sustainable development are intricately linked. Being an important engine to growth, trade can play a crucial role in countries' social and economic development. Measures that hamper trade, on the other hand, distort the opportunities of trade to effectively contribute to growth and development.

As countries implement measures to address climate change, links to trade are discernable. First, trade measures can be used to address climate change mitigation or adaptation, for example by encouraging the dissemination of climate friendly technologies through trade openings or, conversely, by restricting the trade in emissions intensive goods. Second, response measures can affect trade flows. They can alter costs of emissions related to production processes, or of the production itself, by imposing standards or other requirements. This, in turn, can spill over on prices of goods and services and consequently affect demand and thus trade. Such effects can be unintentional.

In addition to the fact that there are a large variety of planned or implemented response measures, the image is further complicated by the fact that measures are generally adapted to the national or regional context. Therefore, an emissions trading scheme or a carbon standard implemented in one

country or region will not be identical to those of other countries, and the trade impacts are therefore likely to vary.

A number of measures to address climate change that are currently in practice or under formulation could be relevant in this context. Such examples are:

a. **Emissions Trading Schemes and Free Allowances**
b. **Border Carbon Adjustments**
c. **Regulation of International Transport**
d. **National and Local Support for Low-Carbon Energy and Technologies**
e. **Standards and Labelling**

Further information on each of these measures and their potential impacts is available in ICTSD's Submission on Information and views relating to modalities for the operationalization of the work programme and a possible forum on response measures (submitted 6 April 2011) [http://unfccc.int/resource/docs/2011/smsn/ngo/286.pdf] and in the annexes to this document.

The broad array of domestic measures with potential impact on third countries makes a case for a process for assessment, discussion and analysis. Such a process could be valuable in helping countries, both those implementing measures and those potentially on the receiving end, to get a better overview and understanding of the measures, as well as to share experiences and lessons that could inform the design of new measures so that the adverse effects are minimized.

Where should countries address trade and climate change?

In spite of the linkages between trade and climate change, and particularly response measures, to date no unique, designated process exists within the multilateral systems for countries to access information, evaluate or discuss these measures. Avoiding the discussion will not, however, resolve the challenges arising to policy-making. Indeed, in the absence of a collective effort to evaluate, understand, and cooperatively work to avoid potential consequences of response measures, there is a risk that trade-related concerns continue to prevent Parties from taking effective action to address climate change. Moreover, action taken without a clear understanding and scrutiny of trade concerns may lead to a sub-optimal balance between the efficiency of policies to address climate change and their potential to allowing for open international trade to contribute to growth and development. It is therefore crucial that discussions advance on how to best address the trade and climate nexus.

The two fora that are the most immediately concerned are the World Trade Organization (WTO) and the UNFCCC. Both should ideally house some level of discussions on trade and climate change, while carefully respecting the mandate and the role of the other.

A clearer determination of which is the most appropriate and effective forum for addressing varying issues is critical. Clarifying what may be addressed under the UNFCCC and what should be addressed elsewhere can serve to avoid conflicts and confusion, as well as to furnish more effective solutions.

a. What the UNFCCC could cover: A forum to inform, analyse and discuss potential and actual impacts

A forum within the UNFCCC could address a breadth of topics of which trade could be one. It could include three pillars of action or more: transparency, research and analysis, and dialogue. A work programme to set up such a forum could include the following:

- **Transparency measures.** Transparency on responses to climate change would benefit both countries undertaking measures and countries subject to impacts. A good scrutiny of the possible impact on third countries may assist countries implementing measures to identify and select options that are the least negative or that minimize any adverse impacts. Also, greater information and communication will assist countries who may be affected to formulate better informed policies in order to shield their economies from adverse effects. Furthermore, increased insights into positive impacts of response measures could support future negotiations as it would build good-will in addition to the actual benefits in terms of sustainable development. Drawing lessons on positive outcomes would also allow their optimization in future policy measures.

  Such transparency could be achieved either through a process of **notification and review**, where Parties undertaking mitigation efforts would be required to notify measures, which would then be subject to a review process where other Parties would be provided an opportunity to ask for information and clarification as well as comment on the measures. Such a solution could build on existing channels of information, for instance the National Communications. Another option could be a regular review of response measures by a specifically assigned body, possibly supplemented by information and commentary by the implementing country. All Parties would then be invited to discuss and react to the review. The trade policy reviews (TPRs) used at the WTO could help inform such a process.

  Countries on the receiving end could also report on experiences of impacts to their social and economic development from response measure, as well as possibly on their own measures to address impacts.

  Putting in place a mechanism for multilateral transparency and discussion would ensure that countries do not have to rely on their own resources to monitor the measures undertaken by every other Party. This would be particularly valuable to the most vulnerable economies, which have limited resources to monitor and respond.

- **Expertise, research, and information.** Research and analysis exist for some response measures and their potential impact on social and economic development. The forum could include a process for compiling, structuring, and making this available in a database or clearinghouse. This would also allow the identification of research gaps. The database could be supplemented by the establishment of a small group of specialists from inter-governmental, non-governmental organizations, and academia to help to provide advice, research, and analysis on topics raised at the forum.

- **Dialogue.** The forum could include an ongoing, permanent forum for dialogue. In particular, this would allow for parties as well as relevant organizations to consider issues and particular circumstances that arise as countries and regions implement new measures for mitigation. Such a forum could serve as a space to air concerns, present up-to-date information, and develop solutions. Experiences could be shared and lead to the development of “best

practice" for future design of response measures with the aim of maximizing their efficiency to address climate change while minimizing adverse effects on other countries. Parties could also identify priority items for discussion, consideration and evaluate ways to address issues as part of the forum's function.

b) What the UNFCCC should not handle: Trade rule-making, dispute settlement, and trade liberalization and reform

Part of the controversy surrounding the topic of trade within UNFCCC discussions is due to the uncertainty of where and how to address trade-related issues and also due to the fact that there are other multilateral processes and agreements with mandates over trade issues. It is therefore important to clarify what issues and processes the UNFCCC does not have a mandate to cover as relates to trade and that should consequently not be addressed by a forum. These include:

- Rule-making on trade
- Implementation of trade measures
- Addressing and resolving violations of trade rules
- Trade liberalization and trade reform

Indeed, the WTO as well as other trade agreements have a crucial role to play in this respect. The trade institutions are increasingly concerned with climate change issues, not the least through trade disputes. Also through discussion on how trade can serve as a positive driver for mitigation and adaptation action, an area of constructive inter-linking that deserves attention to advance.

Ultimately, the systems, although different, are interrelated and need careful coordination. What is important is to clarify the distinct responsibilities and ensure that the necessary process and forum exist somewhere to avoid negative consequences and safeguard countries' sustainable development.

This submission was prepared by ICTSD's **Global Platform on Climate Change, Trade and Sustainable Energy**. For questions or comments, kindly contact Ms. Ingrid Jegou, Manager of the Global Platform. Additional research and information on these and related topics is available at: www.ictsd.org

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Free allocation of emission allowances - potential impacts on social and economic development

Emissions trading schemes and free allowances

As a part of their policy to reduce greenhouse gas emissions, a number of countries has put in place emissions trading schemes (ETS), and many more plan to follow suit. Such schemes generally take the form of cap-and-trade systems, consisting of a cap for total emissions from covered sectors, rights or "allowances" to emit greenhouse gases, and a market for trading of allowances. Cap-and trade systems are considered to be cost-effective, as emission reductions can be undertaken where abatement costs are relatively low, whereas industries with less favourable abatement opportunities can buy additional allowances on the market.

However, when imposed unilaterally, the carbon cost under a cap-and-trade system would alter the competitive position of a country's domestic industry, and the industry would risk losing market shares to competitors in less restrained economies. This could lead to carbon leakage, i.e. part of the emissions would simply move abroad, rather than being abated in absolute terms.

A number of tools are available to policy makers in order to address concerns over carbon leakage. One commonly used tool in existing and proposed ETSs is to allocate all or parts of the emissions allowances for free. Such free allowances would be targeted at firms in sectors sensitive to carbon leakage, in particular sectors heavily exposed to trade and facing considerable cost increases due to the ETS. The firms would thus be covered by the scheme and required to hold emissions allowances to account for their emissions, but would be relieved of the direct cost for purchasing the allowance. However, even free allowances constitute a constraint for covered entities. By actually using the allowance, firms would lose an opportunity to sell it for profit, something they could do if they were able to abate parts of their emissions. Therefore, at least theoretically, the firms would have an incentive to curb their greenhouse gas emissions.

Subsidy elements may distort trade and thus sustainable development

Although from a trade perspective free allocations appear less provocative than border taxes, there may be reason for third countries to be vigilant. Indeed, depending on the design of the ETS and the mode of allocating the emissions, free allowances risk providing advantages or acting as subsidies to some firms within the ETS, beyond compensating them for the carbon cost. Such firms may find themselves in a stronger financial situation, possibly strengthening
their competitive position compared to foreign firms.

The effects of subsidies in terms of potentially boosted exports and/or lower prices could be felt by all firms operating in the world market. In other words, it would not be possible to provide preferential treatment to developing country actors in recognition of the principle of common but differentiated responsibilities, nor would it be possible to specifically target polluting firms or countries without a carbon cost. As trade is an important engine for growth and thus sustainable development, measures hampering free trade may have a negative impact on development.

In addition to free allowances creating wealth in general, there are other elements of potential subsidies in free allocation. First, there is a risk of over-compensation. This can happen either as firms are allocated more allowances than they would need to account for their emissions, or when they receive free allowances although they are able to recoup the carbon cost from the consumers. In the case of over-compensation, "windfall profits" occur. This has been registered in the case of the EU-ETS, in particular in the power sector.

Second, depending on how new entrants on the market are treated, there is potential scope for a subsidy-effect. Indeed, giving allowances for free to new entrants can be considered an investment subsidy. In addition, giving free allowances in proportion to the energy-intensity can bias incentives towards more carbon-intensive investments. A lack of harmonization with respect to new entrants can create further distortions; research shows that within the EU, free allocations to a new natural gas combined-cycle plant would vary from zero allowances in Sweden to as much as allowances worth EUR 11 million in Germany, at a carbon price of 10 EUR/tonne[1].

Third, similar challenges arise with regard to plant closures. If the allowances allocated for free are withdrawn in the case of a plant closure, this turns the allowance into a production subsidy, thereby creating incentives to keep inefficient plants running.

Finally, if sectors are not treated the same within an ETS - as has been the case in the EU- ETS, where there have been differences in implementation between member countries - firms in one country may find themselves in a stronger competitive situation than its counterparts in other countries. This can clearly affect competition between those firms. Further research would be necessary in order to examine if and how such distortions could affect trade with third countries.

Design matters: developing a "best practice"

The potential problems described above may occur in relation to free allowances, depending on the design of the measures. A number of factors play a role in determining the potential effects. For instance, the type of cap and the type of targets have an importance. Second, the mode for determining the amount of allowances to distribute for free equally plays a role. Generally, it seems that when free allowances are determined on the basis of "grandfathering", the problems related to windfall profits and accrued wealth increase.

In the light of this, and considering the wide use of emissions trading schemes and free allowances, more empirical analysis could eventually be featured into international climate and trade negotiations. Developing a set of guiding principles or a "best practice" for emissions trading schemes and the use of free allowances might be on idea worth taking into consideration. This could help ensure that efforts to address climate change are efficient and effective and that possible adverse effects on the social and economic development of developing countries in particular are minimized.

[1] Åhman, Markus and Kristina Holmgren (2007) "New entrant allocation in the Nordic energy sectors: incentives and options in the EU-ETS". IVL Swedish Environment Institute

This paper has been prepared by Ingrid Jegou of ICTSD. It is based on the Ingrid Jegou and Luca Rubini (2011). "The Allocation of Emission Allowances Free of Charge: Legal and Economic Considerations". ICTSD Programme on Competitiveness and Sustainable Development; Transition to a Low Carbon Future Series, Issue Paper No. 18, International Centre for Trade and Sustainable Development, Geneva, Switzerland. For further information, please contact the author at ijegou@ictsd.ch.

Border Carbon Adjustments

In order to address climate change, a number of countries have put in place policies such as carbon taxes or emissions trading schemes, which put a price on carbon emissions. In these countries there are concerns that the domestically imposed carbon cost may decrease the competitiveness of their emissions-intensive, trade-exposed industries, and lead to carbon leakage. Carbon leakage can occur as a result of climate policies and related increased costs if production, and thus emissions, move to regions with no or lower carbon prices.

Measures such as Border Carbon Adjustments (BCAs) could be introduced to deal with these concerns, and aim at imposing a carbon cost at the border equal to the domestic carbon cost. Such measures can, however, negatively affect export opportunities, and consequently the economic development of trading partners. This is the case particularly for developing countries, which are less prepared to price carbon emissions themselves.

In this context, ICTSD has assessed possible developing country exports that could be affected by potential BCAs implemented by important trading partners such as the EU and the US.

One study focuses on the EU, using a list of sectors sensitive to carbon leakage prepared by the European Commission as a starting point. The study identifies exports from a number of developing countries to the EU that could be affected by possible future EU BCAs. A summary of the findings is presented in Table 1.

Table 1. High Emitting Developing Countries' Carbon Leakage Sensitive Exports to the EU – 2007-2009

Country	Average trade value of exports to the EU in those sectors indentified as most carbon leakage sensitive (in million USD)	… as a percentage of the average trade value of *total* exports to the EU	Exports to the EU as a % of total exports
China	$22,769	6.95%	20.11%
India	$9,119	23.75%	21.19%
Brazil	$6,117	13.80%	23.66%
Mexico	$1,786	10.56%	5.45%
Indonesia	$3,133	17.51%	11.58%
South Korea	$4,752	8.94%	13.94%
Iran	$1,095	6.34%	
South Africa	$7,672	28.10%	30.75%
Saudi Arabia	$3,889	16.24%	7.05%
Thailand	$1,139	5.03%	13.04%
Argentina	$624	4.84%	18.32%
Nigeria	$424	2.49%	20.73%
Taiwan	$2,222	6.98%	
Venezuela	$3,098	41.83%	4.42%
Pakistan	$668	13.61%	25.70%
Malaysia	$1,222	5.15%	11.69%
Egypt	$3,122	31.19%	32.97%
Kazakhstan	$2,727	14.05%	43.83%

Another study with a similar purpose focuses exclusively on Latin America and the Caribbean (LAC). In this study, not only exports to the EU but also to the US were analyzed. To determine the products that could be affected by US BCAs in the future if the country were to pass a comprehensive climate bill, the Waxman-Markey and Kerry-Liebermann bills were used. Both these bills include provisions allowing for the imposition of border measures and outline criteria to determine which specific countries and products would be subject to these measures. Tables 2 and 3 outline the main findings with respect to LAC exports to the US. As can be seen in the tables, under these bills, countries with high emissions would face border measures on all their BCA-eligible products, whereas other countries would face these measures only on their heavily traded eligible products.

Table 2. Overview of Exports to the US – Argentina, Brazil, Mexico, and Venezuela

LAC country	Average (2007-09) trade value of exports to the US in BCA eligible sectors (in million USD)	… as a percentage of the average trade value of *total* exports to the US	Exports to the US as a % of 2007-09 total exports
Argentina	$1,040	20.61%	7.39%
Brazil	$5,692	21.27%	13.45%
Mexico	$7,204	3.55%	81.06%
Venezuela	$1,466	3.59%	19.45%

Table 3. Overview of Exports to the US – The Bahamas, Bolivia, Chile, Colombia, the Dominican Republic, the Netherlands Antilles, Paraguay, Peru, and Trinidad and Tobago

LAC country	Average (2007-09) trade value of exports to the US in those BCA eligible sectors in which the country's exports represent >5% of US imports (in 1.000 USD)	… as a percentage of the average trade value of *total* exports to the US	Exports to the US as a % of 2007-09 total exports
Bahamas	$127,879	19.24%	71.03%
Bolivia	$81,258	17.10%	7.65%
Chile	$2,316,770	27.38%	12.11%
Colombia	$181,103	1.52%	37.84%
Dominican Republic	$470	0.01%	61.24%
Netherlands Antilles	$528	0.07%	20.35%
Paraguay	$31	0.04%	1.93%
Peru	$1,144,361	21.40%	18.44%
Trinidad and Tobago	$1,662,051	20.40%	51.68%

From these studies one can conclude that BCAs, if implemented in the future under similar rules as assumed here, could affect significant values of exports of certain developing countries. The impact on trade and, consequently, on the social and economic development of trade partners to countries imposing such measures, would depend on a number of things, such as the level of the BCA and the design of the measure.

Against this background, it may be useful for multilateral institutions to provide the space for a conceptual discussion on the topic, based on solid research.

Parties may wish to note that one Party (Singapore) has requested the WTO-Secretariat to compile existing studies on the role of BCAs in addressing competitiveness and leakage concerns with as minimal economic and trade impacts as possible; on how these measures can be applied in a WTO- consistent manner; and on the usefulness of developing a set of multilaterally agreed guidelines to pre-empt the abuse of BCAs. Developments within the WTO regarding a possible study on these measures should be followed closely and inform provided to the relevant UNFCCC negotiations.

Finally, Parties may wish to contemplate the specific language negotiated in the Cancun Decisions related to response measures, and devote special attention to the differences with regard to Article XX of the WTO's General Agreement on Tariffs and Trade (GATT), as this could have important consequences for the potential use of BCAs in the future.

This paper has been prepared by Samantha Derksen of ICTSD. It is based on ICTSD (2011) "Developing Countries' Trade Vulnerabilities to EU Climate Change Policies- An Overview of Carbon Leakage Sensitive Trade Flows". ICTSD Programme on Competitiveness and Sustainable Development; Transition to a Low Carbon Future Series; Issue paper No 19; International Centre for Trade and Sustainable Development, Geneva, Switzerland. For further information, please contact the manager of the Global Platform on Climate Change, Trade and Sustainable Energy Ingrid Jegou at ijegou@ictsd.ch

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Regulation of Emissions from the Aviation Sector

The aviation sector is an important contributor to global greenhouse gas (GHG) emissions, accounting for approximately 4 percent of manmade CO_2 emissions. This share is projected to increase rapidly. Due to the international nature of aviation, a global solution would be the most efficient and effective option for addressing the related GHG-emissions. Negotiations so far have been futile, however, due to political disagreements over how to address the UNFCCC principle of common but differentiated responsibility (CBDR).

Against this background, the EU has decided to include aviation in its Emissions Trading System (EU ETS) from 2012.

Regulating emissions from aviation is a response measure to climate change that may have an impact on trade and thus on prospects of development for third countries. Concerns for negative impacts are the greatest among remote countries relying heavily on tourism or on trade in goods that are air freighted.

This brief outlines some of the potential consequences for developing countries in particular from the inclusion of aviation in the EU ETS as an example of a domestic effort to regulate emissions form aviation. It builds on a recent ICTSD Issue Paper by Jasper Faber and Linda Brinke.[1]

Including Aviation in the EU ETS

The EU ETS takes the form of a "cap and trade" mechanism, consisting of a limit on the total amount of carbon dioxide (CO_2) that can be emitted and a market for trading emissions allowances. From 2012 onward, the EU ETS will be extended beyond stationary industries to cover aviation.

The regulation of aviation in the EU ETS is non-discriminatory, meaning that all aircraft operators - regardless of their nationality - need to provide emissions allowances for intra-EU flights, as well as flights to and from the EU. This is intended to limit distortions to competition, since without such regulation non-EU airlines could offer cheaper flights to and from the EU than EU- based airlines. Including non-EU airlines further minimizes concerns of carbon leakage, where otherwise the reduction of emissions by EU airlines would be offset by an increase of emissions from non-EU airlines.

If an airline's emissions exceed its allowances it can reduce its emissions or purchase allowances elsewhere, the choice depending on its abatement costs. The latter option is made possible through the connection of the aviation sector to the EU ETS. While allowances allocated to the aviation industry will only be valid therein, airlines will be permitted to purchase allowances from other sectors covered by the EU ETS, as well as credits through the Joint Implementation (JI) and Clean Development Mechanism (CDM).

[1] Faber, Jasper; and Brinke, Linda; (2011); *The Inclusion of Aviation in the EU Emissions Trading System: An Economic and Environmental Assessment*; ICTSD Programme on Trade and Environment; Trade and Sustainable Energy Series; Issue Paper No. 5; International Centre for Trade and Sustainable Development, Geneva, Switzerland, www.ictsd.org.

Economic and environmental effects

The CO_2 price that airlines face from the inclusion of aviation in the EU ETS will have an upward effect on ticket prices and therefore influence demand. Analysis of the economic effects shows, however, that the impact on ticket prices and demand will be small. This is illustrated in Table 1 which shows the effect of the EU ETS on ticket prices and demand for different prices of CO_2 emission allowances.

Table 1: The impact of the carbon price on ticket prices and demand

Price of CO_2 emission allowance	**€ 10**	**€ 30**	**€ 50**
Fuel price/l increase (€)	0.025	0.075	0.12
Fuel price % increase	5.3%	16%	26%
Ticket price increase	1.3%	4.0%	6.5%
% change in demand	-0.5%	-2.4%	-2.6%

Source: Faber et al, 2011.

Including aviation in the EU ETS will only have a small impact on aviation emissions given this sector's high abatement costs. Instead of implementing costly measures, airlines would rather buy allowances elsewhere. Nevertheless, the impact on net emissions covered by the EU ETS could be large, especially with the projected growth in aviation emissions, meaning that aircraft operators will have to purchase increasingly more allowances from other sectors, hence contributing to reducing emissions elsewhere.

Effects on competition and carbon leakage

Although the regulation's non-discriminatory nature limits distortion of competition, some changes in competitiveness may take place. Regarding flights between cities in and outside the EU, there will be different consequences for EU and non-EU airlines. For most major city-pairs there are direct flights, as well as flights via the hubs of different airlines, usually at a lower fare. Passengers can therefore choose between direct flights, a transfer flight via an EU hub or a transfer flight via a non-EU hub. The hub location matters insofar as for flights with transfer at EU hubs, both flights will be affected by the EU ETS, contrary to none or only one of the flights with transfer at non-EU hubs.

If airlines pass on their EU ETS costs to passengers, there will likely be less passengers between each city pair, with transfers at EU hubs decreasing more in proportion to non-EU hubs. At the same time, passengers on direct flights will likely decrease less. Transfers at non-EU hubs could also fall less than proportionately or even increase. Consequently, the hub effect is likely to put EU airlines at a disadvantage and benefit non-EU carriers. Moreover, there might be a switch to other transport modes, as well as a diversion of tourism away from the EU to further destinations. As a result, some carbon leakage may occur. This is an undesirable side-effect of unilateral climate change measures that undermines the effectiveness of the climate policy.

Developing countries

Developing countries might be affected by the inclusion of aviation in the EU ETS through trade, tourism, and the use of revenues from the allowances auctioned. The increase in transport costs is likely to be passed on to consumers, hence lowering demand for exports from developing countries. Moreover, higher transport costs may further increase the

price of food and other air freighted imports to these countries. But since the rise in aviation costs will be low, the impact on trade between the EU and developing countries is likely to be small. The concrete impact may, however, vary between products and regions, being more pronounced for countries that rely heavily on exports and imports and are vulnerable to transportation costs, such as small island developing states and landlocked countries. Similarly, the impact on tourism is likely to be small, especially since transport costs constitute only a small share of total tourism expenditures.

A share of aviation emissions allowances will be auctioned. Although Member States are free to determine how to use these revenues, they should, according to the relevant EU Directive, be used for climate change adaptation, mitigation, and R&D. This could have a positive impact on developing countries, either through direct investment or spillovers from R&D. Moreover, the high abatement costs in the aviation industry will likely increase the demand for credits from CDM projects, hence benefitting developing countries through increased direct investment.

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Impacts of renewable energy subsidies and green technology support measures on the international trading system

The development of renewable energy is a critical priority in countries' strategies to mitigate climate change. While support policies aiming at the development of clean energy technologies are increasingly used by governments as part of their mitigation efforts, they can also constitute unintended barriers to trade and therefore have negative consequences for social and economic development.

Types of green climate subsidies - push & pull

Governments have a range of subsidy policies targeted at climate change mitigation. These can be divided into two separate options: First of all, governments can reduce existing subsidies to heavily emitting sectors (e.g. fossil-fuel based electricity production).[1] Secondly, governments have the option to provide subsidies and other incentives for reducing emissions and/or for developing and adopting new "climate-friendly goods and services" or "clean energy technologies".

Two categories of renewable energy support policies can be distinguished: *demand-pull* instruments, such as cap-and-trade systems, renewable portfolio standards and feed-in-tariffs (on the right side in Figure 1 below); and *technology-push* instruments, which include R&D, investment, and special financing incentives (on the left side in Figure 1). The rationale behind pull policies is to facilitate the production of electricity by renewable energy sources, whereas push policies aim to support the production of corresponding technologies, (e.g. photovoltaic panels, wind turbines). Trade is the crucial connection between the push and the pull sides.

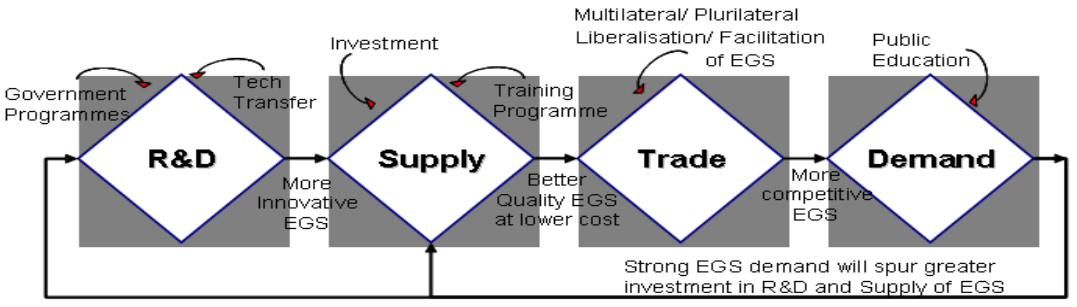

Figure 1: Virtuous Cycle of Success for the EGS Framework

[1] E.g. Removal of coal production subsidies in OECD countries in conjunction with removal of coal market distortions in developing countries could reduce global GHG emissions by up to 8%

Generally speaking, pull instruments – the supporting of production of electricity through renewable energy sources - have the potential to be especially harmful and to distort international trade, whereas push instruments – supporting the production of corresponding technologies - are less harmful but are alone not sufficient to achieve meaningful GHG reductions. Thus, a balanced mix of the two approaches is a necessity for effective domestic renewable energy policies that avoid producing major distortions in international trade.

From a *legal* perspective, technology-push policies are at the greatest risk of conflict with WTO rules, whereas demand pull instruments have the most *economically* distorting potential.

Adverse impacts on international trade

Three divergent general opinions exist on the impacts of renewable energy support policies on international trade. The spectrum ranges from the view that any renewable energy subsidy confers *positive externalities* globally to the "*anti-distortion*" view arguing that the alteration of resource allocation resulting from the impact of subsidies on costs of production *reduces* international welfare. It is, however, the *"anti-injury"* view that convinces most, is widely acknowledged, and underlies the logic of relevant multi-lateral rules (e.g. the *Agreement on Subsidies and Countervailing Measures* follows this concept). This more balanced approach holds that subsidies can be beneficial and therefore domestic governments should have scope to use them. Nevertheless, it does permit some action by other states to the extent that these states are harmed by the subsidy. The reason behind is that balanced renewable energy policies based on subsidies certainly need to be encouraged under the condition that positive effects of domestic renewable energy support are not outweighed by external negative effects of such policies.

Creating inadequate national advantages can incur *adverse effects* with regard to all pillars of sustainable development to the benefit of at best a few actors:

On the one hand, exports of one country boosted by domestic support policies create adverse price effects and can ultimately hamper the healthy development of (infant) clean energy industries in importing countries in addition to negative effects on job markets of affected countries. Coupling clean energy support with the political process, i.e. associating it with job creation as well as with economic development by imposing local content requirements can be an example of protectionist policies. Restrictions on free trade by protectionist policies deprive domestic manufacturers of capacity to compete on the international market by limiting access to best-of-breed suppliers, high-quality products at the lowest possible cost, and retard the adoption of production efficiencies and best practices. This is of special concern for developing countries, which often supply low-tech components, as it disconnects them from global supply chains. From a social development perspective, enacting discriminatory rules that favour one producer or technology over another threatens to eliminate the benefit of economies of scale and consequently unnecessarily raises consumer energy costs. Last but not least, progress in climate change mitigation will be less effective than it potentially could be because the developments described above reduce the overall benefits derived from a growing and profitable clean energy industry by impeding the large-scale deployment of climate-friendly goods and technologies and consequently the continued replacement of fossil fuels by renewable forms of energy.

Conclusion and way forward

Thus, there are potentially beneficial domestic environmental/climate-friendly subsidies but also a risk that governments may use subsidies to unduly protect their domestic industries from competition. The difficult issue becomes how to differentiate between them in order to reduce the negative impacts of protective subsidies on international trade. Another complexity is that – like with regard to conventional subsidies - uncertainties exist about the magnitude of domestic green climate subsidies and about their actual impact on other countries' economies; more detailed research is needed to close this gap.

In any case, unilateral and uncoordinated scale-up of clean-tech support elevates the risk of increasing trade tensions. In order to prevent interferences with the opportunities of trade to contribute to sustainable development, effective (global) renewable energy policy should thus be guided by the following prerogatives:

- a foremost contribution by every single country ought to be the balancing of its domestic support/ subsidy policies, including transparency in the renewable energy sector with respect to publishing laws, regulations and standards in a timely, transparent manner
- international coordination on clean-tech development, standard harmonization, and on how to balance pull and push policies should be enhanced, because otherwise the global effort to reduce GHG emissions will be weakened(within and across countries)

It would be useful for the UNFCCC to support and complement the WTO efforts in this regard, for example by giving the mandate to map out existing issues.

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Andrew Green, "Trade Rules and Climate Change Subsidies", World Trade Review (2006) 5: 3, 377-414;

Emmanuel Guerin/ Joseph Schiavo, "Pushing and Pulling: The bumpy road to effective renewable energy policy", ICTSD, Bridges Trade BioRes Review, Volume 5, Number 1, April 2011, available at: http://ictsd.org/i/news/bioresreview/103559/;

Emmanuel Guerin, Joseph Schiavo (IDDRI), "Chinese renewable energy and technology policies: Legal compatibility with WTO rules & Economic interactions with other countries' climate and industrial policies", March 2001, available at: http://www.iddri.org/Publications/Collections/Idees-pour-le-debat/Chinese- renewable-energy-and-technology-policies-Legal-compatibility-with-WTO-rules-&-Economic-interactions-with- other-countries-climate-and-industrial-policies;

Robert Howse/ Antonia Eliason, "Domestic and International Strategies to Address Climate Change: An Overview of the WTO Legal Issues", in: Thomas Cottier/ Olga Nartova/ Sadeq Z. Bigdeli (eds.), *International Trade Regulation and the Mitigation of Climate Change*, Cambridge University Press, September 2009;

Robert Howse, "Climate Mitigation Subsidies and the WTO Legal Framework: A Policy Analysis", May 2010, available at: http://www.iisd.org/publications/pub.aspx?id=1275;

Bernd G. Janzen, "The Cleantech Subsidy Wave: A new Source of Trade Conflicts?", *International Law News,* Volume 39, Number 3, Summer 2010, available at: http://www.akingump.com/communicationcenter/publicationslist.aspx?KeywordPhrase=cleantech%20subsidy%20wave

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Carbon Standards and Labelling

Carbon standards and labelling are concrete response measures to climate change being instituted in a large and growing number of countries, both by the public – and in particular by the private – sector. In fact, developments in this area are led by the private sector, which is devising standards that affect both sourcing decisions and decision-making within supply chains. The standards require producers to measure and monitor their embedded carbon, and therefore identify measures to reduce emissions. In addition, a growing number of consumer- facing labels are now in use. Such carbon labelling schemes claim to provide consumers with the option of decreasing their personal carbon footprints[1]. Examples of early initiatives include supermarket chains, with companies such as Tesco providing an increasing number of products with carbon labels.

Meanwhile, government-set standards such as the UK's Carbon Reduction Label are following suit[2]. France also has new legislation under development that would make carbon labelling mandatory for a range of consumer products[3]. European-wide sustainability criteria for biofuels, which entered into force in December 2010, contain requirements directly linked to the product's carbon footprint. Given the wide range of standards and methodologies in place or being developed, the International Standards Organization (ISO) plans to launch an international carbon footprint standard, ISO 14067, towards the end of 2011.

Two examples: Kenyan cut flowers and EU sustainability criteria for biofuels

Measuring greenhouse gas emissions is complex, and as of yet an evolving science where practicality and environmental integrity have to be balanced. While many schemes already exist, these do not necessarily fit the different conditions faced by different agricultural producers around the world. Many lessons about labelling have already been learned. For example, the first experiments with labelling – airplane stickers in supermarkets to indicate fresh produce that had been air-freighted – focused narrowly on transport-related emissions and thus ended up putting some of the poorest and most vulnerable countries at an artificial disadvantage. These countries had managed to capture high-value niche markets in developed countries by air-freighting fresh produce during the northern winter. The stickers singled out just one part of the carbon footprint, despite the fact that, overall, the exporters were carbon efficient compared to their counterparts in developed countries, producing out-of-season vegetables in a highly mechanized fashion in greenhouses. Under a differently designed scheme, the small developing-country producers would have been the ones to benefit.

[1] MacGregor, J (2010), "Carbon Concerns: How Standards and Labelling Initiatives Must Not Limit Agricultural Trade From Developing Countries". ICTSD and IPC, 2010.
[2] Steenblik, R and Moise, E (2010), "Counting the Carbon Emissions from Agricultural Products: Technical Complexities and Trade Implications".
[3] See Grenelle II, Article 85, available online at http://www.nosdeputes.fr/loi/2449/article/85

Table 1 below illustrates how the carbon footprint of Kenyan cut flowers compares to that of cut flowers from the Netherlands destined for the UK market.

Table 1. GHG Emissions Comparison—Cut Flowers from Kenya and the Netherlands[4]

Supply chain section	**Kenya**	**Netherlands**
Production	300	36 900
Packaging	110	160
Transport to airport	18	0
Transport to distribution centre	5600	0
Transport to distribution centre from airport	5.9	50
Total (kg of CO2 equivalents)	6 034	37 110

Note: Emissions are shown as Global Warming Potential (GWP) expressed in kg of CO2 equivalents using the IPCC (2001) conversion factors. GWP and CO2 emissions from Kenya include the IPCC altitude factor.

Currently, more sophisticated carbon labelling schemes, based on life cycle analysis, are being set up by the private sector. The products targeted have mainly been agricultural goods, since they tend to be less processed than industrial goods and thus simpler to analyse. However, developing country agricultural products may sometimes been disadvantaged even under such more detailed schemes, due to a high proportion of emissions related to land-use change – where developing countries have had more standing forest than developed countries to begin with. In addition, the schemes do not necessarily account for carbon sequestered through developing country agro-forestry (coffee and cocoa) or in soils[5].

The EU Renewable Energy Directive, which sets out a number of sustainability criteria for biofuels represents a newer, more complete, and also more complex scheme, which sets standards for carbon efficiency, among other sustainability standards. It does have implications for trade in biofuels, as discussed below in Box 1.

[4] Keane, Jodie et al: "Climate Change and Developing Country Agriculture: An Overview of Expected Impacts, Adaptation and Mitigation Challenges, and Funding Requirements" (2009). ICTSD, Geneva.

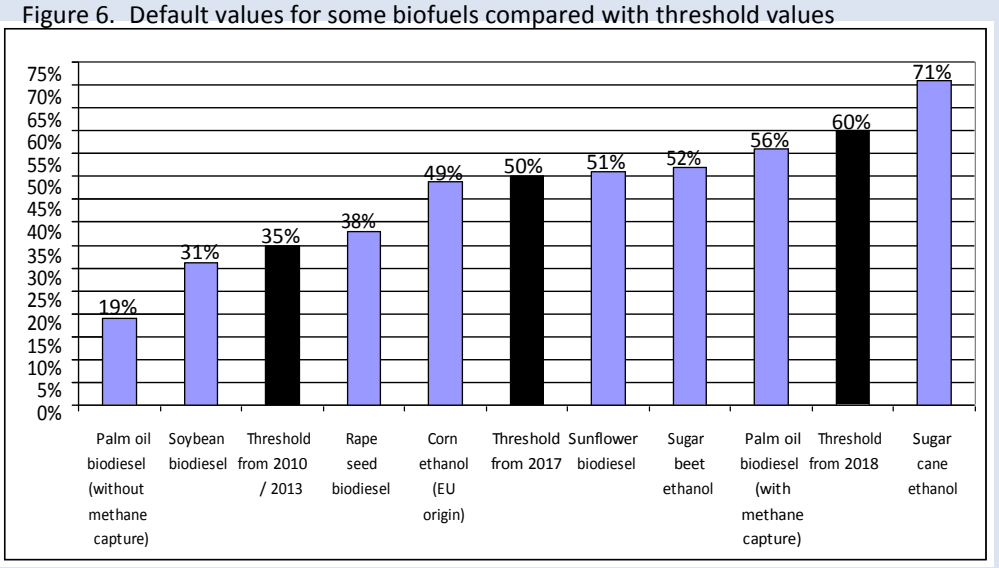
[5] Brenton, P, Edward-Jones, G and Jensen, M.F, (2010) "Can Carbon Labels Be Development Friendly? Recommendations on How to Improve Emerging Schemes". World Bank, Washington, D.C.

Box 1. Government standards: the case of biofuel standards in the EU

At the end of 2010, the EU Renewable Energy Directive (RED), under which member states are required to derive ten percent of their transport fuels from renewable sources by 2020, came into effect. In practice, the quota will mainly be filled through the use of biofuels. However, while some have argued that biofuels could have the potential to address climate change, provide new livelihood opportunities or achieve other public policy goals, others have emphasized that there are also substantial risks associated with their production and the policies designed to stimulate this. These risks relate in particular to the loss of soil carbon and biodiversity due to both direct and indirect land-use changes, and to food security issues.

To address unintended negative side effects, the EU decided that in order to qualify for the RED quota, any biofuel would have to fulfill a number of criteria to ensure its sustainability. Notably, they must be at least 35 percent more carbon efficient than fossil fuels, and cannot be derived from cleared forest or wetlands. Figure 6 illustrates default values of savings rates for different types of biofuels as compared to the threshold values set under the EU RED. The same requirements would apply to domestic and imported biofuels.

Figure 6. Default values for some biofuels compared with threshold values



Source: Figures are based on Annex V of the RED, but not all details are shown. The value for corn ethanol refers to Community production only. There is no default value for third country production.

Some countries consider these criteria to run counter to WTO law, and have said they may challenge them within the dispute settlement system. Preliminary legal analysis tend however to show that the measures envisaged by the EU would probably be largely WTO compatible as they do not provide for unjustifiable discrimination between domestic and imported biofuels.[6],[7]

[6] Swinbank, S (2009) "EU Support for Biofuels and Bioenergy, Environmental Sustainability Criteria, and Trade Policy". ICTSD, Geneva.

[7] Lendle, A and Schaus, M (2010) "The EU's Renewable Energy Directive: Are the Sustainability Criteria for Biofuels Consistent with WTO Obligations?" ICTSD, Geneva.

Balancing opportunities and risks

Among developing countries there is widespread suspicion regarding both standards and labelling. On the one hand, these schemes could provide opportunities for positive product differentiation and market opportunities. On the other hand, many producers are concerned that labelling and standards become barriers to market access. In fact, they see the rise in such non-tariff barriers as potential obstacles to market entry and a vehicle for green protectionism.

There is concern that developing countries are not well represented, nor their voices not heard in the development of private sector labelling schemes in particular. While such private sector schemes can hurt their export interests, developing countries have little room to manoeuvre, given that international trade rules governing standards and technical regulations (namely the WTO Agreement on Technical Barriers to Trade) essentially bind member countries and not private organizations. The WTO does however provide a source of transparency, as members are required to notify official standards: the Committee on Sanitary and Phytosanitary Measures has thus seen lively debate on voluntary standards, and active engagement from the private sector, over the last few years.

Carbon standards and labelling schemes thus provide opportunities as well as challenges for developing countries. Future schemes will need to balance the need for accurate and useful data with the need to be simple, transparent and involve sufficiently low transaction costs to include small countries and producers. While such initiatives may offer a partial solution to the challenge of climate change mitigation, there is arguably a risk that they remain focused on a relatively limited number of products. Furthermore, they are by their very nature unable to provide a systemic solution to the broader market failure in this area at the global level.

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