

RINCO

Idinamandl  
nani elihlel

YKCA



# TIPS

TRADE & INDUSTRIAL POLICY STRATEGIES



*Sustainable Growth*

## Trade and Climate Change: Policy and Economic implications for South Africa

Peet du Plooy and Meagan Jooste

May 2011

*Paper completed for:*



Mitigation Action Plans & Scenarios

## Acknowledgements

In August 2010 Trade and Industrial Policy Strategies (TIPS) were commissioned by the Energy Research Centre (ERC) at the University of Cape Town (UCT), under their Mitigation Action Plans and Scenarios (MAPS) project, to complete a scoping assessment of the inter-relationship between international trade and climate change negotiations as it affects policy-development in South Africa. This paper is a synthesis of this assessment, the outcomes of which were presented by Peet du Plooy to the BASIC (Brazil, South Africa, India and China) Group meeting under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) in Tianjin, China in October 2010. TIPS wish to thank the ERC for funding this research and for their feedback on an earlier draft of this paper.

## Table of Contents

Executive Summary .....	4
Introduction to trade and climate change .....	4
Key findings and recommendations .....	4
Trade and Climate Change in South Africa .....	6
1. Introduction .....	6
2. The case of South Africa .....	6
4. Response Measures and the implications for South Africa .....	9
5. Trade negotiations and environmental goods and services .....	13
5. Trade and climate change in terms of the negotiating texts under the AWGLCA and AWGKP .....	14
6. Recommendations .....	15
7. Further work .....	16
8. References .....	17
9. Appendix .....	20
9.1 A critical review of the ERC model .....	20
9.2 Relevant extracts from the COP15 AWGLCA negotiating text (FCCC/AWGLCA/2009/8) .....	20
9.3 Relevant extracts from FCCC/AWGLCA/2010/6 (excluding Chapter VII) .....	22
9.4 Relevant extracts from FCCC/AWGLCA/2010/8 .....	23

## List of Tables

Table 1: Key Border Carbon Adjustment variations .....	4
Table 2: Potential impacts of variants of BCAs .....	4
Table 3: Key Border Carbon Adjustment (BCA) variations .....	12
Table 4: Potential impacts of variants of BCAs .....	13

## List of Figures

Figure 1: Carbon intensity of major economies including South Africa .....	7
Figure 2: Emissions embodied in trade .....	7
Figure 3: Embodied Energy of South African exports, imports and domestic goods over the period 1993-2005 .....	8
Figure 4: Embodied Energy of Industry Components of the South African Economy .....	8
Figure 5: Export losses or gains for SA under Scenario 1 .....	10

## Acronyms

AWGLCA	Ad Hoc Working Group on Long-Term Cooperative Agreement
AWGKP	Ad Hoc Working Group on the Kyoto Protocol
BASIC	Brazil, South Africa, India and China
BCA	Border Carbon Adjustment
BEET	Balance of Emissions Embodied in Trade
BTA	Border Tax Adjustment
CGE	Computable General Equilibrium
CO <sub>2</sub>	Carbon Dioxide
COP	Conference of the Parties
CTE	Committee on Trade and Environment
EGS	Environmental Goods and Services
ERC	Energy Research Centre
ERCs	Emission Reduction Credits
EU	European Union
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GHG	Greenhouse Gas
ICTSD	International Centre for Trade and Sustainable Development
MRV	Measurable, Reportable and Verifiable
NAMA	Nationally Appropriate Mitigation Action
OECD	Organization for Economic Co-operation and Development
SAEGSF	South African Environmental Goods and Services Forum
SSA	Sub-Saharan Africa
UNFCCC	United Nations Framework Convention on Climate Change
UCT	University of Cape Town
USA	United States of America
WTO	World Trade Organization

## Executive Summary

### Introduction to trade and climate change

Climate and trade issues lie at the intersection of two of the world's most contested, delayed and important multilateral negotiations: climate change negotiations under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC) negotiations and international trade as regulated by the World Trade Organization (WTO) (in particular, agreements like the General Agreement on Tariffs and Trade (GATT) and the Marrakech Agreement). In addition, there are legal findings (like the Shrimp-Turtle case) and other ongoing processes (like the Doha development round).

This paper considers two aspects of overlapping concern to the two agreements which relate to tariff-based trade barriers: border carbon adjustments (BCAs) and the liberalization of trade in Green Industry Products and Services or 'Environmental Goods and Services' (EGS) in WTO parlance.

The key debate in climate negotiations lies in operationalizing the UNFCCC principle of "...common but differentiated responsibilities..." for addressing climate change (UNFCCC, 1992: 1). In general, the debate to date has differentiated between only two classes of countries: those which have legal obligations for absolute emissions reductions under a Protocol of the Convention (usually 'Annex 1' countries under the Kyoto Protocol) and those which do not ('non-Annex 1' countries).

The theme of "...common but differentiated responsibilities..." (ibid) also features in the realm of climate and trade: border carbon adjustments (BCAs) may be seen as a 'back door' for imposing Annex 1 obligations (in terms of carbon pricing) on non-Annex 1 countries, while EGS liberalization may be seen as a means to force market access in the South for industrial products from the North thereby concealing their environmental credentials. Both of these variants could potentially (rightly or wrongly) be viewed as "green protectionism".

## Key findings and recommendations

### Border Carbon Adjustments

There are a number of alternatives and variants to BCAs as outlined in Table 1. Each design variant of BCAs could have a number of different ad- and disadvantages as shown in Table 2.

**Table 1: Key Border Carbon Adjustment variations**

A1: Apply the same carbon price to both domestic and imported 'like' goods
A2: Apply a carbon price based on the embodied carbon or energy of imported goods
B1: Apply to carbon-intensive products only
B2: Apply to all imported products
C1: Apply to all exporter countries
C2: Apply to large exporter countries only

**Table 2: Potential impacts of variants of BCAs**

Variation	Advantages	Disadvantages
A1	Does not discriminate between domestic or imported goods or between different countries and is therefore easier to prove compatibility with GATT Article I.	Provides no additional incentive for carbon-intensive producers
A2	Economically efficient and environmentally optimal	Data requirement is daunting and this involves discrimination of Production and Process Methods (although WTO precedents for this already exist in Shrimp-Turtle and United States Gasoline)
B1	Administratively efficient and would likely exclude agricultural produce (lifeblood of developing nation exporters)	Not full coverage
B2	Full coverage	Administratively complex, particularly for goods where the carbon content is not known or highly variable
C1	Does not discriminate	Administratively complex
C2	Administratively simpler	Discriminatory against large exporters (like China)

The design of BCAs is often done in conjunction with the design of a market-based instrument like a carbon tax or cap-and-trade scheme. Where one of these market mechanisms exists already in an exporter country, they reduce or eliminate the motivation for BCAs, i.e. to equalize the carbon prices on domestic and imported goods.

On BCAs the paper finds that:

1. BCAs can have a significant negative impact on the exports and economies of many developing nations, including South Africa and China, particularly if these countries do not have ‘no-lose’<sup>1</sup> access to global carbon markets.
2. At the same time, it would be politically challenging to implement domestic climate legislation in key countries like the United States of America (USA) without the competitiveness insurance provided by BCAs.
3. BCAs would likely be compliant with WTO GATT even without invoking Article XX if a tariff is applied to all like goods (as per Article III) regardless of their country of origin (as per Article I) and not in excess of the domestic tariff. As such, they may be inevitable.
4. However, if implemented unilaterally by Annex 1 countries against non-Annex 1 countries, BCAs are likely to cause a breakdown in trust that could seriously affect –or even sink- the UNFCCC negotiations.
5. BCAs and the negotiations around them can be used as a means for encouraging “...common but differentiated...” (ibid) climate action.

The authors go on to specifically propose a multilateral climate agreement under the UNFCCC which considers one (or all) of three agreements/provisions to mitigate the impact of response measures on non-Annex 1 countries:

1. The exemption of Least-Developed Countries from BCAs;
2. The inclusion of non-Annex 1 countries in a global carbon trading scheme on the basis of no-lose targets (as demonstrated for South Africa by the University of Cape Town’s Energy Research Centre (ERC) study on the economic effects of response measures implemented by Annex 1 countries, on the South African economy and trade (see Jooste *et al* (2009)); or
3. Making provision for an “effectively comparable” or “minimum effort” carbon price, whose implementation in a country that is a signatory of the Convention would be acknowledged and treated as a Nationally Appropriate Mitigation Action (NAMA). A global deal on climate change should then allow for Non-Annex 1 countries to be exempted from the imposition of any unilateral BCAs by other signatories of the Convention, provided they meet the “minimum effort” requirement for carbon pricing.

While the first option addresses carbon leakage to non-Annex 1 countries (by not preventing BCAs), the second option has the additional advantage of being able to address (at least partially) leakage to Annex 1 countries that are not signatories to the Kyoto Protocol (like the US). The authors also caution about the delay that may be introduced if the establishment of modalities and mechanisms for mitigating the negative impacts of response measures becomes the responsibility of a forum which does not yet exist and may only be mandated at the Conference of the Parties 17 (COP17).<sup>2</sup>

## Environmental goods and services

On the liberalization of trade in EGS the paper finds that very little progress has been made in finding agreement on which goods to liberalize. In addition, the developmental benefit of EGS liberalization for developing nations has not been clearly proven. The authors suggest that while free trade in green industry products may be *encouraged* under a global climate agreement, it should not be reasonably *required*.

The motivation for tariff regimes in most countries is seldom primarily environmental and an imposition of trade liberalization on green industry goods and services may well be seen as “green protectionism” (WWF, 2003) or strong-arm tactics for access to markets by countries with existing leadership in this field, including Germany, Spain, China and the USA. Further, the debate on EGS will likely continue to be subordinate to the Doha Round debate on agricultural and industrial market access.

The authors recommend that the UNFCCC refrains from interfering in trade issues that fall under the WTO. The reason for this is largely pragmatic: avoiding the introduction of decades-long baggage and conflict between Northern (Annex 1) and Southern (non-Annex 1) nations into already-complex climate negotiations.

## The way forward in climate negotiations

Early proposals for possible modalities by which the impact of BCAs may be offset in a fair and effective way, may accelerate progress in preemptively addressing issues that may yet become a thorn in the side of negotiations. Proposals along these lines are included in this paper.

<sup>1</sup> By ‘no-lose’ crediting, reference is made to the ability of big electricity and other large industrial sector emitters in developing countries, to make voluntary pledges to reduce their Greenhouse Gas (GHG) emissions. The key is that these emitters incur no penalty if they do not meet their emission reduction target but, if emissions reductions are in excess of the target then emission reduction credits (ERCs) are earned and can be purchased by industrialized nations (Schmidt *et al*, 2008: 494).

<sup>2</sup> COP17 is scheduled to take place in Durban, South Africa from November 28 to December 9, 2011.

# Trade and Climate Change in South Africa

## 1. Introduction

In his seminal report on the Economics of Climate Change, Lord Nicholas Stern described climate change as the result of the “greatest and most wide-ranging market failure” in the history of mankind (Stern, 2006: 1). Importantly, in the context of trade law Joseph Stiglitz notes that: “Not paying the cost of damage to the environment is a subsidy, just as not paying the full costs of workers would be” (Bacchus, 2010: 6). In this regard, putting a price on greenhouse gas – or carbon - emissions is an essential (though not necessarily sufficient) response to address this market failure in the face of potentially catastrophic climate change. This can be done either through a cap-and-trade system (a volume-based mechanism) or through carbon tax (price-based mechanism).

In a globalized economy, if a carbon price is applied in one country and not in another (or applied at a significantly and relatively, lower rate in one country), there exists an economic incentive for businesses to simply move production of carbon-intensive goods elsewhere. This in turn provides no net gain for the environment and negatively affects the competitiveness of producers in those countries which apply the (relatively higher) price. This phenomenon is commonly referred to as ‘carbon leakage’. There are therefore two main motivations for a country with a domestic price on carbon to also put a carbon price on imports: one environmental (preventing carbon leakage) and one economic (protecting the competitiveness of local products).

In the context of international trade, a form of carbon price implemented to deter carbon leakage comes in the form of Border Carbon Adjustments (BCAs), which are a type of Border Tax Adjustment (BTA). In this paper they are defined as national, essentially unilateral, tariff-based trade measures, designed to apply a carbon cost to imported goods which do not already have either a carbon cost or more specifically, a comparable carbon cost, applied to them. A BCA can be implemented as either an import tax or a requirement that the exporting country surrender an amount of carbon credits that amounts to the equivalent of a tax.

BCAs lie at the core of a fast-evolving global debate on the intersection of climate and trade issues at the crossroads of two of the world’s largest multilateral initiatives, the United Nations Framework Convention on Climate Change (UNFCCC) and the World Trade Organization’s General Agreement on Tariffs and Trade (WTO/GATT). The field also covers attempts to remove tariffs on so-called Environmental Goods and Services (EGS)<sup>3</sup>, non-tariff barriers to trade, the impacts of climate change response measures (i.e. actions in aid of mitigating climate change or adapting to it), as well as the impacts of unavoidable climate change on trade. Non-tariff trade measures which may be related to the environment could include the imposition of standards or requirements for registration, testing, labeling or certification of products and services. However, this paper focuses specifically on the tariff-related aspects.

In Section 2, the paper outlines the South African context in terms of the energy and carbon intensity of the economy and the country’s dependence on wealth generated through the trade of such goods. Section 3 contrasts the findings of the ERC, to other similar studies in terms of the potential economic impacts for South Africa, of Annex 1 implementing response measures to mitigate climate change. Section 4 highlights the treatment of BCAs and EGS, respectively, under the WTO, and Section 5 assesses the implications for the trade and climate change negotiations in respect of the Ad Hoc Working Group on Long-Term Cooperative Agreements (AWGLCA) and the Ad Hoc Working Group on the Kyoto Protocol (AWGKP) under the UNFCCC. Finally, Section 6 puts forward key recommendations.

## 2. The case of South Africa

South Africa is one of the world’s most carbon-intensive economies and a bigger emitter of carbon dioxide (CO<sub>2</sub>) than all other Sub-Saharan African (SSA) countries combined. This is shown illustratively in Figure 1 below. Around 40% of South Africa’s emissions are due to trade (the export of carbon-intensive goods) rather than domestic consumption.<sup>4</sup> This is the highest proportion for any country included in the analysis by Peters and Hertwich (2007), which includes most of South Africa’s major trade partners and competitors as shown graphically in Figure 2 below, taken from Peters and Hertwich (2007).

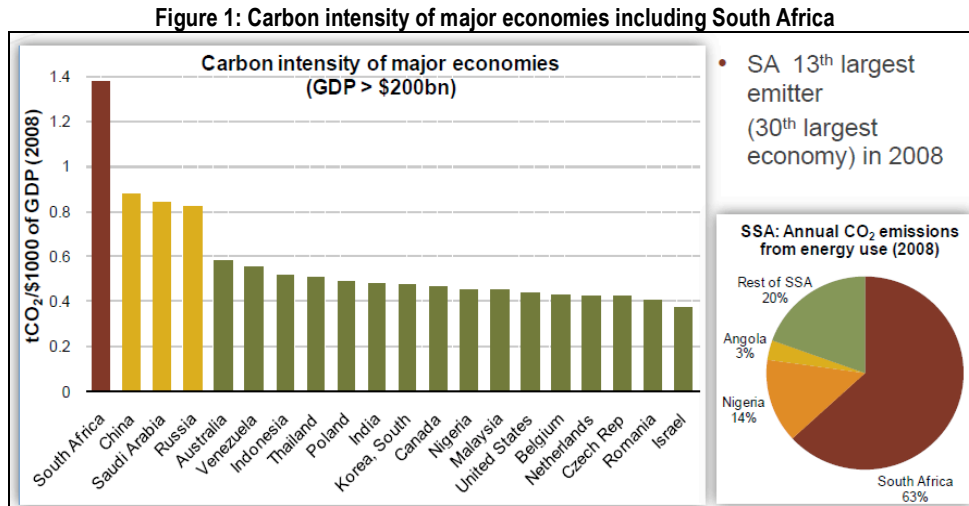
This is a result of:

1. The country’s large mineral wealth: while the mining sector continues to decline as a percentage of the overall contribution to GDP, it still makes up approximately 6-7% of the economy,

<sup>3</sup> EGS is defined differently in trade negotiations than in almost any other branch of economics. Elsewhere, ‘Environmental Goods and Services’ is essentially synonymous with ‘Ecosystem Goods and Services’, referring to the goods and services produced by nature. In the WTO and trade negotiation sphere, EGS is understood as goods and services which reduce the negative impacts of production, on nature.

<sup>4</sup> More accurately, the Balance of Emissions Embodied in Trade (BEET – the net of carbon embodied in exports less carbon embodied in imports) for South Africa is around 40% (38% according to Peters & Hertwich (2007) - see [www.iisd.org/pdf/2008/cph\\_trade\\_climate\\_carbon.pdf](http://www.iisd.org/pdf/2008/cph_trade_climate_carbon.pdf)).

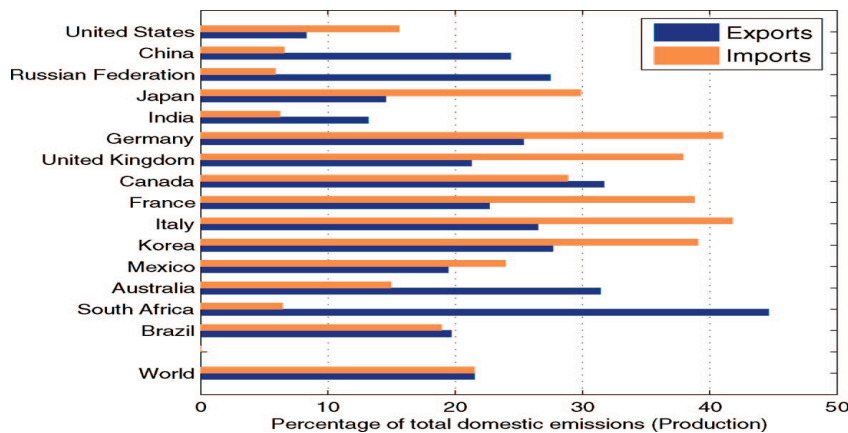
2. A deliberate strategy by the pre-democratic government, continued since 1994 by the democratic government until at least 2008, of encouraging investment in energy-intensive industries, including aluminium and other non-ferrous metal beneficiation (the so-called 'mineral-energy complex'<sup>5</sup>),
3. The carbon-intensity of a largely (90%+) coal-based electricity generation base.



Source: US Energy Information Administration, 2008

At the same time, South Africa has been a progressive participant in global climate negotiations, particularly championing equitable action that recognizes the Convention's principles of "...common, but differentiated responsibilities..." (UNFCCC, 1992) and calling for measurable, reportable and verifiable (MRV) commitments and action in both emissions reduction and financial support.

Figure 2: Emissions embodied in trade



Source: Peters & Hertwich, 2007

### 3.1 A background to carbon pricing and trade and climate analyses in South Africa

A variety of studies (van Heerden *et al* (2006), Pauw (2007), Devarajan *et al* (2009) and Kearney (2010)) have looked at the impact of a carbon tax on Gross Domestic Product (GDP) in South Africa. Since the competitiveness impact of a BCA is effectively the same as that of an equivalent carbon tax in the exporting country (by design), studies on domestic carbon taxes provide insight on the economics of carbon taxes imposed by one or more trade partners which affect exported goods only.

<sup>5</sup> According to Fine (2008: 4) the minerals-energy complex (MEC) can be defined as "...the concrete form of accumulation of capital taken in South Africa, [which] centred on a core set of sectors, but reaching beyond them in terms of corporate control and influence." The MEC thus developed as a result of industrial policy being built around capital intensive mining and minerals extraction (Takala, 2008: 4).

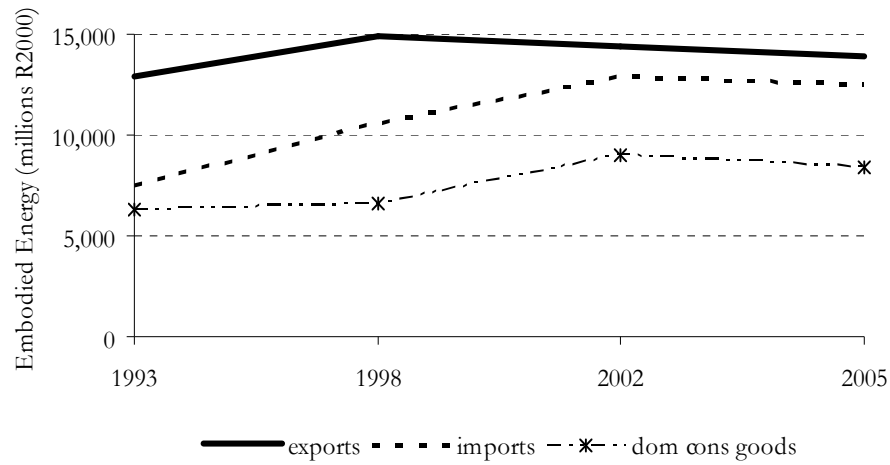


All studies find that the design of a carbon tax and how its revenues are allocated is critical to determining its impact on economic growth, social welfare and environmental protection. The same applies to BCAs. However, since the revenues from BCAs are not for the account of the exporter, the economic benefits of revenue recycling would not accrue to the exporting economy.

Kohler (2008) has investigated the *energy* embodied in SA trade, rather than the *carbon*, but energy is a useful proxy for carbon. The author's results confirm that from 1993 to 2005 the value of energy in exports has continually exceeded the value of energy embodied in either imports or domestically consumed goods (although the difference in energy embodied in exports over imports or exports over domestic consumption has consistently narrowed). These results are illustrated in Figure 3.

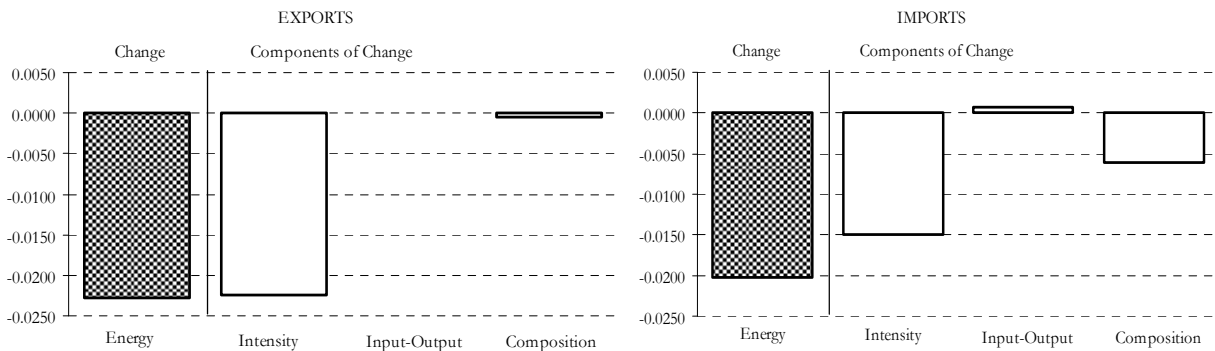
Further, the author finds that historically, South Africa has reduced the energy associated with both imports and exports, but that only a small portion of this has been due to a change in the composition of exports or imports as shown in Figure 4. For the most part the decrease in the total energy intensity of trade was due to a decrease in the energy intensity of the product due to, for example technological innovation. The compositional effect was also only significant on the import side.<sup>6</sup>

**Figure 3: Embodied Energy of South African exports, imports and domestic goods over the period 1993-2005**



Source: Kohler, 2008

**Figure 4: Embodied Energy of Industry Components of the South African Economy**



Source: Kohler, 2008

<sup>6</sup> In terms of the terminology used here, according to the WTO, Trade economists identify trade liberalization as having three distinct environmental impacts in terms of scale, composition and technique. *Scale* refers to the phenomenon whereby increased economic activity leads to increased greenhouse gas emissions being created. *Composition* in contrast relates to the fact that countries tend to focus production in sectors in which they host a comparative advantage and as such their carbon intensity will rest on whether they choose to expand economic activity in high or low energy-intensive products. Lastly, *technique* highlights the fact that there is a potential for energy efficiency improvements whereby the production of goods and services leads to lower levels of greenhouse gas emissions. In summary, the interplay between trade and climate change depends on the extent of economic activity, whether the composition of goods favours less energy-intensive goods and the degree to which production techniques improve energy efficiency(WTO, 2009a: xii).

## 4. Response Measures and the implications for South Africa

Under the United Nations Framework Convention on Climate Change (UNFCCC)<sup>7</sup> it is upheld that “Parties shall take into full consideration, in the implementation of the commitments of the Convention, the specific needs and concerns of developing country Parties arising from the adverse effects of climate change and/or the impact of the implementation of response measures.” Further, it specifies that “...the Kyoto Protocol commits Parties to strive to minimize adverse economic, social and environmental impacts on other Parties, especially developing country Parties...”

Jooste *et al* (2009) recognize that response measures are those tools and instruments implemented by developed countries in pursuance of their mitigation targets on the “...production, processing and export, and/or on consumption of fossil fuels and associated energy-intensive products” (UNFCCC: Article 4.8). These are implemented in relation to the extent of income dependency of other countries, on such goods. The fear which arises for developing countries is the impact which such developed country response measures will have on their trade balances in particular. The likely result being a reduction in exports for energy-intensive and trade-exposed goods.

Response measures form part of a recurring debate under the UNFCCC; on 9 June 2010 the Ad Hoc Working Group on Long-Term Cooperative Agreement (AWG-LCA) found that there are social and economic implications to response measures. Specifically, indicative questions of the following form were posed:

1. How should Parties affected by economic and social consequences of response measures be assisted to address such consequences?
2. Is there a need for a forum to address the consequences of response measures? If so, what form should it take, what functions would it perform and what would be its relationship to existing and emerging institutional arrangements?

Further to this, the Ad Hoc Working Group on the Kyoto Protocol (AWG-KP) was asked to establish, through informal consultations, the “... potential environmental, economic and social consequences, including spillover effects, of tools, policies, measures and methodologies available to Annex I Parties...”.

In light of these discussions, BCAs can be seen as a mechanism to protect one economy from a loss of productivity due to the implementation of response measures to climate change (i.e. the so-called ‘carbon leakage’ phenomenon).

### 4.1 UCT Energy Research Centre Study

It is in this context that the Energy Research Centre (ERC) recently conducted a simulation analysis of the potential impacts of response measures to climate change on the South African economy and trade (Jooste *et al*, 2010). The ERC model simulated two emission reduction scenarios for Annex 1 countries, the first of an emission reduction of 25% from 1990 levels by 2020 (Scenario 1) and the second an emission reduction of 40% from 1990 levels by 2020 (Scenario 2).

These scenarios were considered with three variations:

1. No emissions Trading,
2. Annex 1 (A1) Emissions Trading only and
3. A1 Emissions Trading and access to the carbon market on a ‘No-lose’ crediting basis, by developing countries (i.e. non-Annex 1 (nA1) countries).

The latter variation, at the time, aligned with one of the propositions for a post-2012 agreement under the UNFCCC that explicitly incorporates developing countries. The study found that:

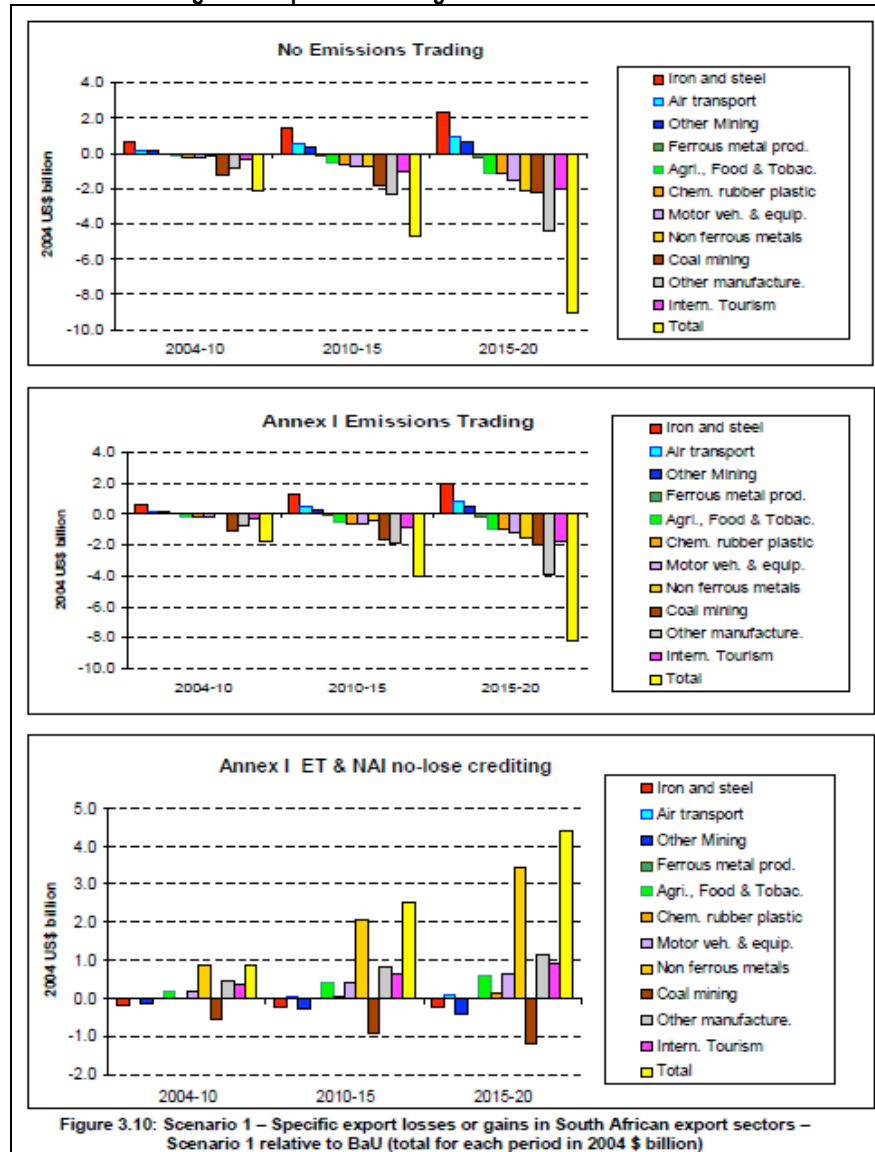
- When nA1 is not included in global trading, a variety of sectors would be significantly (even severely) affected by response measures, especially coal, non-ferrous metals, other manufactures and international tourism,
- When nA1 is included in international carbon markets, the impact is positive on all sectors (except for coal mining, where the negative impact is less negative).

Figure 5 below provides a graphical display of these findings under Scenario 1.<sup>8</sup>

<sup>7</sup> Excerpts taken from UNFCCC website on ‘Impact of the implementation of response measures’ at: [http://unfccc.int/cooperation\\_support/response\\_measures/items/4908.php](http://unfccc.int/cooperation_support/response_measures/items/4908.php)

<sup>8</sup> The Appendix Section 9.1 provides a critical review of the assumptions and policy applicability of the ERC model.

Figure 5: Export losses or gains for SA under Scenario 1



Source: Jooste et al, 2009

## 4.2 Comparison with other studies and findings

While the ERC model/study is not the first of its kind globally, it is unique in its application to South Africa - making its comparability limited. However, a recent World Bank study by Mattoo *et al* (2009) provides some basis for comparison as the magnitude of impacts modeled is similar. This is with the exception that in the Mattoo *et al* (2009) model the level of carbon tax assessed is higher than that reviewed in the ERC model. Mattoo *et al* (2009) finds that, if developing nations reduce their emissions by 30% relative to the Business As Usual (BAU) scenario in 2020, while industrialized countries reduce their emissions in absolute terms by 30% compared to their 2005 emissions, manufacturing output and exports in low carbon intensity countries such as Brazil are not significantly affected. In contrast, in high carbon intensity countries, such as China and India, even a modest agreement depresses manufacturing output by 6–7% and manufacturing exports by 9–11%.

Another point of reference for comparison to the ERC study would be current and future analyses of the potential impacts of economic climate policy (carbon taxes or emissions trading scheme studies), on the South African economy and trade. The South African National Treasury will shortly be releasing two such documents in the near future, a Carbon Tax Discussion Document and an Emissions Trading Discussion Document. As mentioned earlier, studies by van Heerden *et al* (2006), Pauw (2007), Devarajan *et al* (2009) and Kearney (2010) proved that the design of a carbon tax and how its revenues are allocated is critical to determining its impact on economic growth, social welfare and environmental protection. While BCAs can be seen to have an impact, cognizance

must be taken of the fact that the revenues from BCAs are not for the account of the exporter and thus the economic benefits of revenue recycling would not accrue to the exporting economy.

In general, the ERC model is a unique study of the potential impact of South African and international climate policies, on the South African economy and trade. However, some lessons can be learnt from the studies by Kohler (2008) in terms of how the scale of a potential BCA would hinge on the amount of carbon or energy embodied in South African exports. The implications for South Africa's economy and trade will thus be dependent on the design of a BCA – an issue discussed later in this paper. Worth mentioning is that the ERC model was conducted in a static Computable General Equilibrium (CGE) framework. Future analyses may be enhanced if completed in a dynamic CGE framework which allows one to trace the evolution of different dynamics through the economy (Kearney, 2010).

### 4.3 WTO compatibility of BCAs

Under the GATT Article II 2(a), countries are not prohibited “from imposing at any time on the importation of any products ...a charge equivalent to an internal tax...in respect of the like domestic product or in respect of an article from which the imported product has been manufactured or produced in whole or in part” (Pauwelyn, 2007:17).

In other words, Border Tax Adjustments (BTAs) are tolerated, meaning that the WTO allows its members to impose on imported products a charge equivalent to local taxes. However these adjustments must meet a few criteria:

1. Under GATT Article I they should not discriminate between foreign and local producers of like products and,
2. Under GATT Article III they cannot discriminate between like products based on their country of origin (Cosbey, 2008: 3-5). This second criteria implies that BCAs could not legally discriminate between countries depending on their carbon policies.

According to Pauwelyn (2007:42) a BCA policy meeting these requirements could thus be accepted as a BTA by the WTO and would then be easier to administer as the same tax could be applied to all foreign products regardless of their domestic policy and it would be up to them to rebate such taxes from their exporting industries. If accepted as such by the WTO, these BTAs could then be applied to both developed and developing countries alike.

In the GATT Superfund Case it was found that a US tax on certain substances used as inputs in the production of certain chemicals and imposed directly on products, could be considered as BTAs. Some authors interpret this as a confirmation that the WTO could consider a BCA on products using carbon as an input eligible as a BTA (Tamiotti *et al*, 2009:104).

However, even if BCAs do not meet these requirements, they could still be legal under the environmental exception clause of GATT Article XX(g) as a measure “...relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.”<sup>9</sup> (Wooders, Cosbey & Stephenson, 2009: 42).

In the US – Gasoline case, the US had adopted measures regulating the composition of gasoline locally in order to reduce air pollution, and sought to impose it on imported gasoline too. The Appellate Body found that such imposition fell within the scope of the paragraph as it was “...primarily aimed at...” the policy of clean air which met the “...evenhandedness...” requirement between domestic and imported products (Tamiotti, 2009: 108). The US-Shrimp (Implementation under Article 21.5) case<sup>10</sup>, found that a ban under Article XX(g) on shrimp imports based on how they were caught abroad, would have been admissible providing it met these two same criteria and was consistent with domestic policy (Pauwelyn, 2007: 34), as well as being compliant with the requirements of the Article XX chapeau.

Under that exception the BCA would have to take into account not only the foreign regulations, but also the economic situation prevailing in the concerned countries. In other words, developing countries would have to be treated differently from their developed counterparts (Pauwelyn, 2007: 43).

On the 26<sup>th</sup> of June 2009, the WTO reportedly gave a cautious backing to a carbon import tax saying that: “Some countries may be allowed to impose a carbon tax on imports of energy-intensive products from parts of the world that do not have emission reduction commitments” (ENDS Europe, 2010). Shortly after the Copenhagen Conference, Pascal Lamy, the WTO director-general mentioned that: “During the conference the issue of border measures was raised. The WTO membership, like the United Nations members in Copenhagen, is divided on this matter” (van der Merwe, 2010). The opinion of the WTO is that a multilateral agreement on the condition for the use of such measures should be reached to alleviate the concerns linked to trade (van der Merwe, 2010). One way or another it is therefore not implausible that fairly designed BCAs could be implemented legally under current international trade laws, preferably after an agreement is reached on the conditions for their use.

While BCAs can therefore be WTO compatible if designed not to be discriminatory between domestic and national products or between like products from different exporters, Grubb (2010) notes that “...trying to deter ‘inadequate’ action by other countries is very different from [a] focused objective to tackle carbon leakage..”, resulting in two profoundly different Border Adjustment discussions:

<sup>9</sup> GATT Article XX(g) available [http://www.wto.org/english/tratop\\_e/envir\\_e/envt\\_rules\\_exceptions\\_e.htm](http://www.wto.org/english/tratop_e/envir_e/envt_rules_exceptions_e.htm)

<sup>10</sup> WT/DS58/RW/AB

1. Threatening trade measures against countries not taking 'comparable' action implies an extra-territorial judgement on 'adequate' action and is explicitly discriminatory (i.e. imposes a Kyoto tax on non-Kyoto signatories) and,
2. Tackling carbon leakage through cost-levelling at the border between domestic and international goods or products where a specific problem (i.e. "...relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption..." as per GATT Article XX) can be demonstrated is generally non-discriminatory.

These subtleties are important when considering the role of BCAs in climate negotiations. While on the one hand they may be regarded as a 'nuclear option' (i.e. a final solution, but one for which the collateral damage is unacceptably high) for forcing a carbon price on non-Annex 1 nations which have not agreed to it, it can also be productively used (if agreed to) by all nations as a legally justifiable tool for ensuring a minimum level of climate action (through carbon pricing) in all nations, both non-Annex 1 and Annex 1 (for example the US). There may well also be alternatives to and variants of BCAs, which are in turn discussed below.

#### 4.3.1 Alternatives to BCAs<sup>11</sup>

##### *"Free" allocation*

Free allocation of allowances (or tax exemptions) for vulnerable, high-carbon export industries can be used by importer nations to protect their domestic industries. It cuts leakage, but increases the carbon price, since other (domestic) industries are left to make up the difference. In contrast, border levelling cuts leakage without significant efficiency loss, and with greater scope (covering more products/industries).

##### *Consumption-based emissions assessment*

The present system of emissions accounting considers a country's total, production-based emissions. If this were changed so that countries would be only responsible for emissions related to their own domestic consumption, then the motivation for BCAs would fall away. A move to consumption-based emissions assessment would be especially advantageous for carbon- and export-intensive countries like South Africa, Russia and OPEC countries, but would have challenging data requirements to track the in- and out-flows of embodied carbon (to correct production-based emissions numbers) in all of the world's economies.

##### *Production-based carbon pricing*

BCAs are essentially consumption-based carbon pricing instruments. A carbon price can also be levelled in the form of a carbon tax at the point of production, i.e. within the exporting country. If such a price was already levelled on an imported product, it would be unnecessary (and not WTO compatible) to tax it again through a BCA (unless the BCA covered only the shortfall in the price levelled by the exporter, compared to the price applied to domestic production),

Pricing carbon within an exporter country (through, for example a carbon tax) helps to pre-empt the imposition of BCAs against goods imported from that country. This is especially significant when considering that at least two of the BASIC countries at greatest risk from BCAs (China and South Africa) are already considering a domestic carbon tax.

#### 4.3.2 Variants of BCAs<sup>12</sup>

A number of potential variants can be employed in the design of BCAs, as demonstrated in proposals or draft legislation by the EU and US among others. These variants are expressed in Table 3. Each design variant comes with advantages and disadvantages. These are outlined in Table 4. The design of BCAs is often done in conjunction with the design of a market-based instrument like a carbon tax or cap-and-trade scheme.

**Table 3: Key Border Carbon Adjustment (BCA) variations**

A1: Apply the same carbon price to both domestic and imported 'like' goods
A2: Apply a carbon price based on the embodied carbon or energy of imported goods
B1: Apply to carbon-intensive products only
B2: Apply to all imported products
C1: Apply to all exporter countries
C2: Apply to large exporters only

<sup>11</sup> See Grubb and Counsell

<sup>12</sup> See (Holmes) and (Bigdelli 2008)

Table 4: Potential impacts of variants of BCAs

Variation	Advantages	Disadvantages
A1	Does not discriminate between domestic or imported goods or between different countries and is therefore easier to prove compatibility with GATT Article I.	Provides no additional incentive for carbon-intensive producers
A2	Economically efficient and environmentally optimal	Data requirement is daunting and this involves discrimination of Production and Process Methods (although WTO precedents for this already exist in Shrimp-Turtle and US Gasoline)
B1	Administratively efficient and would likely exclude agricultural produce (lifeblood of developing nation exporters)	Not full coverage
B2	Full coverage	Administratively complex, particularly for goods where the carbon content is not known or highly variable
C1	Does not discriminate	Administratively complex
C2	Administratively simpler	Discriminatory against large exporters (like China)

## 5. Trade negotiations and environmental goods and services

As noted in the introduction, the issue of tariffs also arises elsewhere in the climate-trade nexus, particularly in the form of a move under the WTO (rather than the UNFCCC) towards the liberalization of Environmental Goods and Services (EGS).

The Marrakech Agreement which established the World Trade Organization (WTO) also adopted by the Ministerial Decision on Trade and Environment which explicitly noted the link between sustainable development and trade liberalization thereby acknowledging that environmental and social objectives are inter-linked (Hufbauer and Kim, 2009 and WTO, 2009a: 80). Further, it called for the establishment of the Committee on Trade and Environment (CTE) (Hufbauer and Kim, 2009).

Under the Doha Round, which started in November 2001, the CTE was mandated to consider the liberalization of trade in EGS. However, progress in this regard has been limited due to a number of reasons:

1. The Doha Round involves a “single undertaking”, which implies that any resolution on EGS liberalization would have to form part of a wider package which would require a successful negotiation on agricultural and industrial goods – two areas on which negotiations have effectively deadlocked,
2. There is no clarity on what goods would qualify, explicitly, as “environmental” goods, or “environmental” services (i.e. EGS) and
3. There is no clarity on how EGS would be liberalized (modalities of liberalization).

At the outset it is important to recognize that there is currently no single, agreed definition or classification for environmental goods and services (EGS). The WTO CTE is currently conducting a process to determine how to define EGS. The issue which arises is that different countries’ definitions vary based on whether the goods are used for waste management and pollution to innovations for large-scale production of renewable energy (South African Environmental Goods and Services Forum (SAEGSF), 2008).

Under the WTO environmental goods and services cover a spectrum of subsets including Renewable Energy, Solid and Hazardous Waste Management, Water and Waste Water Treatment and Air Pollution Control and Environmental Technologies. According to a demand-side approach to estimating the size of the EGS sector, in 2004 the South African Environmental Goods and Services (EGS) sector was valued at between R14.5 billion and R23.2 billion (NEDLAC, 2006).

Very often the Organization for Economic Co-operation and Development (OECD) definition of the EGS industry is utilized which is that “The environmental goods and services industry consists of activities which produce goods and services to measure, prevent, limit, minimize or correct environmental damage to water, air and soil, as well as problems related to waste, noise and eco-systems. This includes cleaner technologies, products and services that reduce environmental risk and minimize pollution and resource use (OECD, 1999).”

The International Centre for Trade and Sustainable Development (ICTSD) (2008a) specifically recognizes that under the WTO Doha Round there are notable challenges in terms of negotiations around the liberalization of EGS. Definitional disputes around EGS play a key role. Various approaches have been proposed for defining what goods would qualify as “environmental”:

1. A “project-based” approach (favoured by Argentina and India) which would see products qualify through their “environmental end-use” in projects like those qualifying under the Clean Development Mechanism.

2. A “list-based” approach (as proposed by the “Friends of Environmental Goods” group, which includes Canada, the European Union (EU), Japan, Korea, New Zealand, Norway, Switzerland, Taiwan and the US) which initially listed 153 products, of which the EU and US informally proposed a subset of 43 climate-friendly goods for accelerated liberalization.
3. A “request-offer” approach (proposed by Brazil). This would see countries request specific commitments from each other, but has to date been dominated by countries proposing liberalization of products in which they hold a competitive advantage (e.g. Brazil proposed ethanol, Qatar gas, Saudi-Arabia carbon capture and storage and Japan energy-efficient appliances).

Beyond the debates around definitions, the ICTSD (2008a: iv) finds that there are a number of asymmetrical benefits and detrimental impacts which could potentially arise from the liberalization of the EGS sector. Specifically,

1. Liberalization of climate mitigation goods may bring benefits to developed and a portion of middle-income countries but it may not provide developing countries with any environmental benefits,
2. The Doha Round WTO negotiations may not provide the appropriate solution for the liberalization of climate mitigation goods and thus alternatives need to be explored,
3. Any liberalization agreement under the WTO would need to be matched by financial and technical assistance packages housed within a suitable institution, whether it be the UNFCCC or elsewhere and lastly,
4. The success of trade liberalization in regard to climate change mitigation efforts will hinge on the surrounding institutional and enabling environment in which it is implemented.

These considerations are likely to continue to impede progress on EGS liberalization for some time to come. The debates and tensions that inform negotiations on agricultural and industrial goods are likely to continue to be reflected when it comes to EGS since EGS is largely composed of goods are either agricultural (like ethanol) or industrial (like efficient appliances).

## 5. Trade and climate change in terms of the negotiating texts under the AWGLCA and AWGKP

Preventing “arbitrary or unjustified discrimination or a disguised restriction on international trade” is a prominent theme in the Tianjin (2010) UNFCCC negotiating text (FCCC/AWGLCA/2010/14). However the liberalization of EGS does not currently feature as part of the UNFCCC negotiations. This is perhaps not surprising as it is - and may well remain a - WTO issue. On the other hand, the role of BCAs in the climate negotiations is growing increasingly prominent.

The reason for this is that BCAs touch on two key issues:

1. Dealing with the “impact of response measures” as provided for by the Convention and
2. Dealing with the competitiveness concerns that inform the political reticence of countries like the US to sign up to the Protocol.

It is clear that unilateral BCA measures can be a serious impediment to North-South trust in the negotiations. At the same time, it is unlikely that they can be prevented by recourse to the WTO and that the ability to implement BCA provisions would be essential for the success of US climate legislation and the country’s subsequent inclusion in a global deal.

The negotiating text devotes Chapter VII to response measures. Three options are listed for dealing with Border Carbon Adjustments:

“2.

*Option 1:*

[Agrees that developed country Parties shall not resort to any form of unilateral measures, including fiscal and non-fiscal border trade measures against goods and services from developing country Parties on any grounds related to climate change, including protection and stabilization of climate, emissions leakage and/or cost of environment compliance, recalling the principles and provisions of the Convention, in particular Article 3, paragraphs 1, 4 and 5, Article 4, paragraphs 3 and 7, 8, 9, 10;

[Recalling the principles and provisions of the Convention, in particular Article 3, paragraphs 1, 4 and 5, Article 4, paragraphs 3, 5 and 7, and taking into account the principles of equity, common but differentiated responsibilities and the obligation of the developed country Parties to provide financial resources, transfer of technology and provide capacity building support to the developing country Parties, the developed country Parties shall not resort to any form of unilateral measures, including tariff and non-tariff or other fiscal and non-fiscal border trade measures, against goods and services from developing country Parties on any grounds related to climate change, including protection and stabilization of climate, emissions leakage and/or cost of environment compliance.]]

*Option 2:*

[Urges Parties to take into account the principles of the Convention including its Article 3, paragraph 5, in relation to the economic and social consequences of response measures;]

*Option 3:*

[Agrees that Parties, in the pursuit of the objective and implementation of the Convention, shall not resort to any measures, in particular unilateral fiscal or non-fiscal measures applied at the border against goods and services imported from Parties, that constitute a means of arbitrary or unjustified discrimination or a disguised restriction on international trade, taking into account the relevant provisions of the Convention and further recognizing the principle enshrined in Article 3, paragraph 5;]

There are thus essentially three variants: abstain from any unilateral BCAs against developing countries, be considerate when implementing BCAs or allow “fair” BCAs subject to provisions of the Convention.

In earlier negotiating text (FCCC/AWGLCA/2010/8) the topic of response measures had been separated from issues on adaptation, but in the Tianjin (2010) text, response measures have been bracketed into the text alongside adaptation (similar to FCCC/AWGLCA/2010/6) and now feature widely across the text, however the proposed options for dealing with BCAs remain unchanged from earlier versions in 2010. If response measures become an area of significant dispute, its inclusion with adaptation may well hinder further progress on one of the few areas where some headway has been made (adaptation). Relevant extracts from the COP15 AWGLCA negotiation text, as well as texts considered in 2010 are included in the Appendix

An interesting footnote is included from FCCC/AWGLCA/2010/8: “According to the Bali Action Plan, consideration of economic and social consequences of response measures is not limited to mitigation action by developed country Parties only,” suggesting that the issue is no longer only about Annex 1 protectionism.

The negotiating text also notes, as an option, the establishment of a forum for dealing with information and issues relating to response measures at the Conference of the Parties 17 (COP17). The authors of this report caution that the creation of new institutions can be time-consuming and may delay an urgent outcome.

A compromise beyond the three options currently in the text that defines the acceptable modalities of what would constitute “fair” BCA implementation based on multilateral agreement is most likely to yield a positive outcome – aiding in the negotiations process rather than scampering it. If these modalities could be included in negotiations early on, it may help to fast-track a process which may otherwise have been significantly slowed down by the creation of an institution becoming a pre-requisite for determining these modalities.

## 6. Recommendations

The authors recommend that while free trade in green industry products may be *encouraged* under a global climate agreement, it should not be reasonably *required*. The issue of market access and trade liberalization is a thorny one that has already led to the deadlocking and delay of a multilateral negotiation process (the WTO Doha Round). The UNFCCC is not intended to be an alternative to the WTO and would be wise to avoid further complicating an already-intricate negotiating agenda.

On the issue of Border Carbon Adjustments and the UNFCCC negotiations the authors recommend that BCAs be considered an issue best left to the WTO to judge as fair or not. That said, a Global Deal might – rather than condemning BCAs altogether or developing its own trade law capacity to enforce fair trade outside of the WTO/GATT – consider pre-emptive, collective *solutions* to address the risks to trust and welfare that arise from BCAs.

The authors propose a multilateral climate agreement under the UNFCCC which considers one (or all) of the following three agreements/provisions to mitigate the negative impact of response measures on non-Annex 1 countries:

1. The exemption of Least-Developed Countries from BCAs;
2. The inclusion of non-Annex 1 countries in a global carbon trading scheme on the basis of no-lose targets (the impact of which has been demonstrated for South Africa by the UCT Energy Research Center study (see Jooste *et al* (2010)); or
3. Making provision for an “effectively comparable” or “minimum effort” carbon price<sup>13</sup>, whose implementation in a country that is a signatory of the Convention would be acknowledged and treated as a Nationally Appropriate Mitigation Action (NAMA). A global deal on climate change should then allow for Non-Annex 1 countries to be exempted from the imposition of any

<sup>13</sup> The authors estimate that it is likely that South Africa will introduce a carbon tax of in the region of R100+/-R25/tCO<sub>2</sub>. If the “minimum effort” price was set at \$10/tCO<sub>2</sub>, South Africa would qualify.



unilateral BCAs by other signatories of the Convention, provided they meet the “minimum effort” requirement for carbon pricing.

Access to a global market with no-lose crediting is attractive for various reasons, including the fact that a carbon market that extends beyond Annex 1 can significantly reduce the cost of carbon. Ensuring the success of a global carbon trading scheme is likely to overlap to a large extent with the debate on sectoral agreements and the future of flexible mechanisms like the Clean Development Mechanism.

While the second option addresses leakage to non-Annex 1 countries (by not preventing BCAs), the second option has the additional advantage of also being able to address (at least partially) leakage to Annex 1 countries that are not signatories to the Kyoto Protocol (like the US). According to Winchester *et al* (2010:1), “BCAs are a costly method to reduce leakage but such policies may be effective coercion strategies.”

The third option is perhaps simpler, achieving much of the intent of BCAs (i.e. correcting for un-priced carbon), but with the crucial distinction that *the tax revenues go to the exporter* (which is very likely to be a developing nation) *rather than the importer*.

## 7. Further work

One of the elements which an economic model like the GTAP or other CGE models employed by van Heerden *et al* (2006), Pauw (2007), Devarajan (2009), Jooste *et al* (2009) or Kearney (2010), fails to capture is the political acceptance of response measures under the WTO. It is worth noting that economic models by their very nature are modeled on assumptions based on the current nature of an economy. As such, revisions of such models have to be done in order to account for economic and policy developments. One of the major pitfalls of such models being that they cannot predict or make accurate assumptions about, how politics, here specifically in terms of the WTO and UNFCCC negotiations, will unfold. In addition, while the economic instruments proposed in terms of BCAs and the liberalization mechanism for EGS could provide economic and environmental effectiveness and efficiencies, careful monitoring and evaluation of these mechanisms is needed to ensure these economic and environmental rewards are reaped.

Future studies may need to be specialized for specific sectors of the economy. In particular, assessing the implications of UNFCCC and WTO decisions for the agricultural sector in South Africa, such as whether eco or carbon labeling of exports will be required, are pivotal to the productivity of this sector in the SA and other African economies (many of whose economic wealth is generated largely from the agricultural sector). The ERC model is potentially a unique study internationally and certainly, for South Africa. However, as it was completed prior to COP15, it is not modeled on the emission reduction offers made by the South African delegation to the COP15.

An update of this model which encompasses these offers for emissions reduction could shed light on how the country can minimize its losses and maximize the gains associated with this offer. In sum, in future, sector-specific studies will be necessary to account for the WTO and UNFCCC's specific treatment of different sectors in legislation and implementation of the rules these bodies impose on member countries. For South Africa the first step would thus be to update the ERC model based on scenarios informed by the South African delegation's emission reduction offers, as well as conducting the simulation using a dynamic CGE framework which permits a period-by-period assessment of the impacts of policies or economic shocks to the South African economy and trade.

## 8. References

- Bacchus, J. 2010. Questions in Search of Answers: Trade, Climate Change, and the Rule of Law. Keynote Address to the business-government-academic conference Climate Change, Trade and Competitiveness: Issues for the WTO. Available at: [http://graduateinstitute.ch/webdav/site/ctei/shared/CTEI/events/TAIT%202/Keynote\\_Bacchus\\_Final\\_Plus\\_Discussions.pdf](http://graduateinstitute.ch/webdav/site/ctei/shared/CTEI/events/TAIT%202/Keynote_Bacchus_Final_Plus_Discussions.pdf) (Accessed 13 December 2010).
- Bigdeli S. 2008. 'Adjusting carbon tax at the border—GATT compatibility'. World Trade Institute, Berne, Model WTO 2008, University of St. Gallen.
- Charnovitz, S. 2003. 'Trade and Climate: Potential Conflicts and Synergies'. Pew Center Working Paper. Beyond Kyoto: Advancing the International Effort against Climate Change. Accessible at: [http://www.pewclimate.org/docUploads/Beyond\\_Kyoto\\_Trade.pdf](http://www.pewclimate.org/docUploads/Beyond_Kyoto_Trade.pdf)
- Devarajan, S., Go, D.S., Robinson, S. & Thierfelder, K. 2009. *Tax policy to reduce carbon emissions in South Africa*. Policy research working paper 4933. The World Bank. May 2009.
- Duhain, G. and Mtanga, S. (2010, forthcoming) The Introduction of Border Carbon Adjustments in South Africa: An Evaluation, TIPS Research Note, Pretoria: TIPS
- Fine, B. 2008. Engaging the MEC: Or a Lot of My Views on a Lot of Things. *Paper for Workshop at University of KwaZulu-Natal, June, 2008*. Draft for discussion only. Accessible at: [http://www.iippe.org/wiki/Minerals\\_Energy\\_Complex\\_and\\_Comparative\\_Industrialisation\\_Working\\_Group](http://www.iippe.org/wiki/Minerals_Energy_Complex_and_Comparative_Industrialisation_Working_Group)
- Frankel, J. 2009. Global Environment and Trade Policy. In: Aldy, J and Stavins, R. 2009. *Post-Kyoto Climate Policy*. Cambridge University Press.
- Grubb, M. 2010. Climate Change, Trade and Leakage – Myths and Realities. *Climate Strategies*. Power-point presentation at ECBI Colloquium.
- Grubb, M. and Counsell T., 'Tackling Carbon Leakage – sector-specific proposals for a world of unequal carbon prices', Carbon Trust (with Climate Strategies)
- Holmes P., Reilly T., Rollo J, 'Border Carbon Adjustments: an excuse for Murky Protection?' Accessible at: [http://www.gtdforum.org/download/BCAs\\_WTO\\_Nov\\_11.pdf](http://www.gtdforum.org/download/BCAs_WTO_Nov_11.pdf)
- Hufbauer, G.C and Kim, J. 2009. The World Trade Organization and Climate Change: Challenges and Options. *Peterson Institute for International Economics*. Working Paper 09-9. Accessible at: <http://www.iie.com/publications/wp/wp09-9.pdf>
- Hufbauer, G.C; Charnovitz, S and Kim, J. 2009b. In Brief: Global Warming and the World Trading System. *Peterson Institute for International Economics*. Accessible at: <http://www.piie.com/publications/briefs/hufbauer4280.pdf>
- International Centre for Trade and Sustainable Development (ICTSD). 2008a. Liberalization of Trade in Environmental Goods for Climate Change Mitigation: The Sustainable Development Context. *Trade and Climate Change Seminar*. June 18 – 20, 2008. Copenhagen, Denmark.
- Jooste, M; Winkler, H; van Seventer, D and Truong, TP. 2009. The effect of response measures to climate change on South Africa's economy and trade. *Energy Research Centre, University of Cape Town*. Final Report to the Department of Environmental Affairs (DEA), Pretoria, South Africa. Accessible at: [www.erc.uct.ac.za](http://www.erc.uct.ac.za)
- Kearney, M. 2010. Modelling the impact of CO2 taxes in combination with the Long Term Mitigation Scenarios on emissions in South Africa using a dynamic computable general equilibrium model, in H. Winkler, A. Marquard & M. Jooste (eds.). *Putting a price on carbon: Economic instruments to mitigate climate change in South Africa and other developing countries*, Proceedings of a conference held at the University of Cape Town, 23–24 March 2010.
- Kohler, M.2008. The Sustainability of South Africa's Energy Resources: The Impact of International Trade. Presentation made at the Trade and Industrial Policy Strategies Annual Forum 2008.

- Low, P; Marceau, G and Reinaud, J. 2010. The interface between the trade and climate change regimes: Scoping the issue. *Thinking Ahead on International Trade (TAIT)*. Preliminary draft of a background paper written for Round Table 3 on Climate-linked tariffs and subsidies: Eco-legal interface.
- Mattoo, A; Subramanian, A; van der Mensbrugge, D and He, J. 2009. Reconciling Climate Change and Trade Policy. *Policy Working Paper 5123*. World Bank
- Moore, M.O. 2010. 'Implementing Carbon Tariffs: A Fool's Errand?' Policy Research Working Paper 5359. World Bank. Accessible at: [http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2010/07/19/000158349\\_20100719141341/Rendered/PDF/WPS5359.pdf](http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2010/07/19/000158349_20100719141341/Rendered/PDF/WPS5359.pdf)
- Nedlac. 2006. A preliminary national position on an integrated approach to reduction and elimination of tariffs and nontariff barriers in environmental goods and services. T 13/04/06. Accessible at: <http://www.nedlac.org.za/media/14422/egs%20paper%20final%20report.pdf>
- OECD (Organization for Economic Co-operation and Development). 1999. The Environmental Goods and Services Industry. *Manual for Data Collection and Analysis*. OECD, Paris.
- Pan, J and Chen, Y. 2008. Towards a global climate regime. Accessible at: <http://www.chinadialogue.net/article/show/single/en/2616-Towards-a-global-climate-regime>
- Pauw, K. 2007. Economy-wide modeling: An input into the Long Term Mitigation Scenarios process. *LTMS Input Report 4*. Energy Research Centre, Cape Town, October 2007.
- Pauwelyn, J. 2007. U.S Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law. *Prepared by the Nicholas Institute for Environmental Policy Solutions*. Duke University.
- Peters, GP & Hertwich, EG (2007) "CO2 embodied in international trade with implications for Global Climate Policy", 42(5). *Environmental Science and Technology*.
- Schmidt, J; Helme, N; Lee, J and Houdashelt, M. 2008. Sector-based approach to the post-2012 climate change policy architecture. *Climate Policy*, 8: 494-515.
- South African Environmental Goods and Services Forum (SAEGSF). 2008. Website: <http://www.egsf.org.za/>
- Stern, Nicholas. 2006. Stern Review: The Economics of Climate Change. Available at: <http://siteresources.worldbank.org/INTINDONESIA/Resources/226271-1170911056314/3428109-1174614780539/SternReviewEng.pdf> (Accessed 13 December 2010).
- Takala, L. 2008. The role of industrial policy and the minerals-energy complex in the decline of South African textiles and clothing. *Annual Forum 2008 – South Africa's economic miracle – has the emperor lost his clothes?* SOAS, London. Accessible at: <http://www.tips.org.za/publication/role-industrial-policy-and-minerals-energy-complex-decline-south-african-textiles-and-cl>
- Tyler, E. 2010. Aligning South African energy and climate change mitigation policy, in Winkler, H; Marquard, A & Jooste, M (eds.). *Putting a price on carbon: Economic instruments to mitigate climate change in South Africa and other developing countries*, Proceedings of a conference held at the University of Cape Town, 23–24 March 2010.
- United Nations Framework Convention on Climate Change (UNFCCC). 1992. United Nations Framework Convention on Climate Change. Available at: <http://unfccc.int/resource/docs/convkp/conveng.pdf> (Accessed 13 December 2010).
- United States Energy Information Administration. 2008. Carbon intensity of major economies. Available at: <http://www.eia.doe.gov/>. (Accessed 3 September 2010).
- Van der Merwe, C. 2010. Issue of Environmental Border Trade Measures Raised at Copenhagen. *Engineering News*, 05-01-2010. [Online] Available: <http://www.engineeringnews.co.za/print-version/issue-of-environmental-border-trade-measures-raised-at-copenhagen-2010-01-05> (Accessed 15 December 2010).

- Van Heerden, J., Gerlagh, R., Blignaut, J., Horridge, M., Hess, S., Mabugu, R. & Mabugu, M. 2006. Searching for Triple Dividends in South Africa: Fighting CO<sub>2</sub> pollution and poverty while promoting growth. *The Energy Journal*, 27(2).
- WWF. 2003. Green Protectionism. *5<sup>th</sup> WTO Ministerial Conference, Cancun: WWF Briefing Series*. Available at: [http://www.wto.org/english/forums\\_e/ngo\\_e/wwf\\_greenprotec\\_e.pdf](http://www.wto.org/english/forums_e/ngo_e/wwf_greenprotec_e.pdf). (Accessed 13 December 2010).
- Winchester, N; Paltsev, S and Reilly, J. 2010. Will Border Carbon Adjustments Work? *MIT Joint Program on the Science and Policy of Global Change*. Report No. 184. Accessible at: [http://globalchange.mit.edu/files/document/MITJPSPGC\\_Rpt184.pdf](http://globalchange.mit.edu/files/document/MITJPSPGC_Rpt184.pdf)
- World Trade Organization (WTO). 2009a. Trade and Climate Change: A Report by the United Nations Environment Programme and the World Trade Organization. Geneva.
- WTO. 2009b. 'Workshop on Environmental Goods and Services: 23 – 25 September 2009'. Trade and Environment. Accessible at: [http://www.wto.org/english/tratop\\_e/envir\\_e/wksp\\_goods\\_sept09\\_e/wksp\\_goods\\_sept09\\_e.htm](http://www.wto.org/english/tratop_e/envir_e/wksp_goods_sept09_e/wksp_goods_sept09_e.htm)
- WTO. 2010a. 'An introduction to trade and environment in the WTO'. Trade and Environment. Accessible at: [http://www.wto.org/english/tratop\\_e/envir\\_e/envt\\_intro\\_e.htm](http://www.wto.org/english/tratop_e/envir_e/envt_intro_e.htm)
- WTO. 2010b. 'The impact of trade opening on climate change'. Trade and Environment. Accessible at: [http://www.wto.org/english/tratop\\_e/envir\\_e/climate\\_impact\\_e.htm](http://www.wto.org/english/tratop_e/envir_e/climate_impact_e.htm)
- Zadek, S, Ritchken, E, Fakir, S and Forstater, M (2010) 'Developing South Africa's Economic Policies for a Low Carbon World'. [www.zadek.net](http://www.zadek.net)

## 9. Appendix

### 9.1 A critical review of the ERC model

An assessment of the ERC model raises some queries regarding the assumptions on which the model is based. Firstly, the ERC model proposes two scenarios of emissions reductions of 25% and 40% respectively, from 1990 levels by 2020. Whether such emissions reductions are reasonable is questionable as it could be argued that 25% is probably a high assumption given the extent of present commitments under the Copenhagen Accord (amounting to closer to 17%). However, the study shows that the level simply raises the extent or magnitude of impact, not its (sectoral) distribution.

Secondly, while the model captures the sectoral implications for South Africa in relation to other countries, well, it does not speak sufficiently well to the social and environmental implications of response measures. In particular, other than the labour market implications, what feedback loop effects may occur in terms of poverty and inequality? Similarly, how response measures may affect South Africa's development agenda in terms of a "New Growth Path", the Medium Term Strategic Framework and the Industrial Policy Action Plan, is of importance. This may require a separate more distinct study but this is an area of particular concern to a country plagued with numerous Apartheid-legacy social ills. In some cases, the need for social development may supersede environmental considerations and climate policy in the domestic and international environment needs to actively account for such potentially conflicting or complimentary policies.<sup>14</sup>

Thirdly, there may be some limitations to conducting this analysis in a CGE framework according to a restricted set of assumptions about the current political and economic environment. One suggestion may be to compliment this CGE analysis (taking some its initial findings and outcomes) to pose the question to policy-makers and other key civil society and private sector stakeholders, as to whether the model captures the full set of possible impacts or how it could be transformed to account for as many such impacts as possible.

Fourth, the GTAP model utilized by the ERC was of a comparative static CGE form. A future formulation of this model in a dynamic CGE framework could illustrate more effectively how variations in otherwise static variables, would account for impacts unforeseen through the ERC model. This is because, in contrast to a comparative static CGE model which focuses on the impact of certain policy shocks or economic events, a dynamic CGE model facilitates policy-makers in tracing how changes in economic policy or shocks to the economy, affect the economy on a 'period by period' basis (Kearney, 2010).

Fifth, while the ERC study assessed the potential for non-Annex 1 countries to access carbon markets through no-lose crediting, whether such a mechanism will be instituted under the UNFCCC is still unclear. Further, whether no-lose targets will be sufficient to compel non-Annex 1 to reduce their emissions or will, just delay them ever reducing emissions, is yet to be tested. As such, a careful assessment of whether there is robustness of no-lose targets assessed in the ERC model is needed. In addition, investigation into what other options there are for non-Annex 1 to enter carbon markets is necessary.

Lastly, it is worth noting that the ERC model was completed prior to the Conference of the Parties 15 (COP15) in Copenhagen, Denmark in December 2009. As such, an update of this model according to South Africa's statement at the COP15 whereby it offered to "...reduce emissions by 34% of a business as usual trajectory by 2020, and 42% by 2025, subject to international technological and financial assistance" (Tyler, 2010), could illustrate whether these are reasonable targets in the sense that they minimize the economic losses and maximize the gains for the South African economy and trade.

### 9.2 Relevant extracts from the COP15 AWGLCA negotiating text (FCCC/AWGLCA/2009/8)

#### "D. Cooperative sectoral approaches and sector-specific actions"<sup>25</sup>

129. Cooperative sectoral approaches and sector-specific actions {shall} {should} enhance the implementation of Article 4.1(c) of the Convention. To this end, these approaches and actions {should}:

- (a) Be applied at the national level {only};
- (b) Be tailored to national sector-specific needs and priorities and consider social and economic conditions and other relevant factors;
- (c) Be aimed at strengthening cooperative actions within any phase of the technological cycle and facilitate the management of technical and financial resources for the implementation of NAMAs;
- (d) Assist in fostering initiatives in R&D, capacity-building and technological cooperation;

<sup>14</sup> Future GTAP models may have to be devised specifically to tap into those potential implications. However, a key constraint with CGE and even basic Input-Output tables is that the degree of sectoral dis-aggregation is limited by the capacity of Microsoft Excel or GAMMs software used in such analyses. In particular, such programs can only withstand the simulation of matrices of a certain size (and thus such models are limited in terms of the extent of sectoral break-down possible).

<sup>25</sup> The Bali Action Plan, in its paragraph 1 (b) (iv), calls for the consideration of enhanced national/international action on mitigation of climate change, including, inter alia, cooperative sectoral approaches and sector-specific actions.

- (e) Assist in achieving the levels of financing and technology transfer necessary to address climate change in a measurable, reportable and verifiable manner;
- (f) Facilitate the identification of best practices and best available technologies for each sector through cross-border analysis and promote the transfer of those best practices and best available technologies from developed country Parties through analysing reduction potentials and setting indicators.

132. The implementation of cooperative sectoral approaches and sector-specific actions should not replace the national targets of developed country Parties or lead to new commitments for developing country Parties, trans-national or national emission reduction targets, arbitrary or unjustifiable discrimination or disguised restriction on international trade, or the application of global uniform and equal standards for Parties.

...

#### **F. Economic and social consequences of response measures<sup>28</sup>**

...

159. Parties shall strive to implement policies and measures to respond to climate change in such a way as to minimize adverse effects, including the adverse effects of climate change, effects on international trade, and social, environmental and economic impacts on other Parties, especially developing country Parties, and in particular those identified in Articles 4.8 and 4.9 of the Convention, taking {fully} into account Article 3 of the Convention {, in particular Article 3.5}.

160. Adverse economic and social consequences of response measures {shall}{should} be addressed by promoting and supporting economic diversification and the development and dissemination of win-win technologies in the affected countries, paying particular attention to the needs and concerns of the poorest and most vulnerable developing country Parties.

161. Developed and developing countries {shall} {should}:

- (a) Assess the economic, cultural, environmental and social effects that result from mitigation strategies and measures;
- (b) Consider how to avoid negative spillover effects when designing policies and measures to tackle climate change;
- (c) Provide information in their national communications on any impacts arising from the implementation of their commitments under the Convention and any related instruments;
- (d) Undertake comprehensive studies of direct costs and impacts of response measures, as well as associated indirect costs and impacts on other Parties, especially on developing country Parties identified in Articles 4.8 and 4.9 of the Convention.

162. Efforts to assess the potential effects of response measures should not constrain or hinder progress in addressing climate change.

163. Developed country Parties {shall}{should} provide support to developing countries, particularly those specified in Articles 4.8 and 4.9 of the Convention, in order to address issues related to economic diversification, risk assessment, modelling and insurance to prevent the adverse effect resulting from the spillover effects.

164. A forum shall be established, under the {COP}{Subsidiary Body for Implementation}, to provide a venue for Parties to share information, experiences and views on the economic and social consequences of response measures, so as to enhance the efforts of Parties to analyse and understand these consequences and to identify innovative policy responses and technologies to address adverse consequences. This forum shall be open to participation from all Parties and intergovernmental organizations and mobilize expertise from the scientific and modelling communities and the private sector. The work of the forum should lead to a comprehensive framework to address adverse consequences by, inter alia:

- (a) Enabling all Parties to select appropriate and effective policies and measures that achieve the desired mitigation results while avoiding or reducing the adverse impacts of these policies and measures on the sustainable development of other Parties, particularly developing country Parties;
- (b) Enabling developing country Parties confronted by unavoidable adverse consequences of policies and measures to strengthen their resilience and adaptive capabilities and to undertake economic diversification, integrating these responses in their sustainable development processes.

165. The forum should implement a work programme that includes the following components:

- (a) Insurance and financial risk management;
- (b) Modelling, analytical and methodological tools;
- (c) Economic diversification.”

<sup>28</sup> The Bali Action Plan, in its paragraph 1 (b) (vi), calls for the consideration of enhanced national/international action on mitigation of climate change, including, inter alia, and economic and social consequences of response measures.

## 9.3 Relevant extracts from FCCC/AWGLCA/2010/6 (excluding Chapter VII)

### Chapter I

4.

#### *Option 1:*

In accordance with the provisions of the Convention, the Conference of the Parties shall periodically assess overall progress in implementing the Convention, as well as commitments and actions on mitigation, adaptation, finance, technology development and transfer and capacity-building. The Conference of the Parties shall also periodically evaluate the long term global goal for emission reductions. These assessments should take into account, as appropriate:

...

#### **(c) The need to prevent and minimize negative impacts of climate change and response measures;**

The Conference of the Parties shall take appropriate action based on these assessments. Further modalities of these assessments shall be determined by the Conference of the Parties. The first assessment shall start no later than 2013 and be concluded no later than 2015. Subsequent assessments shall be conducted every [X] years.

#### *Option 2:*

An assessment of implementation should be completed by 2015, including in light of the Convention's ultimate objective. This would include consideration of strengthening the long-term goal referencing various matters presented by the science, including in relation to temperature rises of 1.5 degrees Celsius.

### **Enhanced action on adaptation and its associated means of implementation**

#### *Agrees that*

5. Adaptation to the adverse effects of climate change **and the potential impacts of response measures** is a challenge faced by all countries. Enhanced action and international cooperation on adaptation is urgently required to ensure the implementation of the Convention by enabling and supporting the implementation of adaptation actions aimed at reducing vulnerability and building resilience in developing countries, especially in those that are particularly vulnerable, especially least developed countries, small island developing States and Africa.

...

### **Other aspects of mitigation**

#### *Decides*

17. To [establish] [provide for] **a forum to consider actions to address the impact of the implementation of response measures on Parties** referred to in Article 4, paragraph 8, of the Convention, in accordance with guidance to be agreed by the Conference of the Parties, pursuant to provisions on economic and social consequences of response measures as presented in chapter VII.

## **Chapter II: Enhanced action on adaptation**

1. [*Agrees that* adaptation to the adverse effects of climate change **[and/or to the impact of the implementation of response measures]** is a challenge faced by all Parties and that enhanced action and international cooperation on adaptation is urgently required to enable and support the implementation of adaptation actions aimed at reducing vulnerability and building resilience in developing country Parties, especially in those that are particularly vulnerable;]

...

4. *Invites* all Parties to enhance adaptation action under the Copenhagen Adaptation Framework [for Implementation] taking into account their common but differentiated responsibilities and respective capabilities, and specific national and regional development priorities, objectives and circumstances, [and whereby developing country Parties shall be supported by developed country Parties and in accordance with paragraph 6 below], to undertake, inter alia:

(e) Enhancing climate change related disaster risk reduction strategies, considering the Hyogo Framework for Action2 where appropriate; early warning systems; risk at local, national, sub regional and regional levels, as appropriate, to address loss and damage associated with climate change impacts in those developing countries that are particularly vulnerable to the adverse effects of climate change **[and/or to the impact of the implementation of response measures]**;

...

8.

*Option 1:*

*Establishes* an international mechanism to address [social, economic and environmental] loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change [**and/or to the impact of the implementation of response measures**], including impacts related to extreme weather events and slow onset events,<sup>4</sup> through risk management, insurance, compensation and rehabilitation;

*Decides* to elaborate modalities and procedures for the international mechanism to address loss and damage, for adoption by the Conference of the Parties at its sixteenth session;

*Option 2:*

*Agrees* on the need to strengthen international cooperation and expertise to address [social, economic and environmental] loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change [**and/or to the impact of the implementation of response measures**], including impacts related to extreme weather events and slow onset events,<sup>5</sup> including through risk management and insurance, as appropriate;

*Requests* Parties to explore whether risk management mechanisms may need to be established or enhanced at subnational, national, regional and international levels, as appropriate;

## 9.4 Relevant extracts from FCCC/AWGLCA/2010/8

7. Addressing the impact of the implementation of response measures is a challenge faced by all Parties, in particular developing country Parties, and that enhanced action and international cooperation on response measures is urgently required to enhance knowledge and understanding of the matter and to reduce vulnerability and build resilience in affected countries.

26. [Procedures for measurement, reporting and verification of enhanced mitigation action by developed country Parties shall take into account specific needs and concerns of developing country Parties arising from the impact of the implementation of response measures, consistent with Article 4, paragraph 8, of the Convention.]<sup>15</sup>

## 6. Economic and social consequences of response measures

*Decides*

59. To [establish] [provide for] a forum and/or other arrangements to consider actions to address the impact of the implementation of response measures on Parties referred to in Article 4, paragraph 8, of the Convention, in accordance with guidance to be agreed by the Conference of the Parties, pursuant to provisions on economic and social consequences of response measures as presented in chapter VII.

## Chapter II: Enhanced action on adaptation

*[The Conference of the Parties,*

1. [*Agrees* that adaptation to the adverse effects of climate change [**and/or to the impact of the implementation of response measures**] is a challenge faced by all Parties and that enhanced action and international cooperation on adaptation is urgently required to enable and support the implementation of adaptation actions aimed at reducing vulnerability and building resilience in developing country Parties, taking into account the urgent and immediate needs of developing countries that are particularly vulnerable to the adverse effects of climate change, especially the least developed countries and small island developing States, and further taking into account the needs of countries in Africa affected by drought, desertification and floods;]

4. *Invites* all Parties to enhance adaptation action under the Adaptation Framework [for

<sup>15</sup> According to the Bali Action Plan, consideration of economic and social consequences of response measures is not limited to mitigation action by developed country Parties only.



Implementation] taking into account their common but differentiated responsibilities and respective capabilities, and specific national and regional development priorities, objectives and circumstances, [and whereby developing country Parties shall be supported by developed country Parties and in accordance with paragraph 6 below], to undertake, inter alia:

...

(e) Enhancing climate change related disaster risk reduction strategies, considering the Hyogo Framework for Action<sup>2</sup> where appropriate; early warning systems; risk assessment, and management and sharing and transfer mechanisms such as insurance [, compensation and rehabilitation]; at local, national, sub regional and regional levels, as appropriate, to address loss and damage associated with climate change impacts in those developing countries that are particularly vulnerable to the adverse effects of climate change [and/or to the impact of the implementation of response measures];

(i) Improving climate-related [and related to the impact of the implementation of response measures] research and systematic observation for climate data collection, archiving, analysis and modelling for improved climatic-related data and information to decision-makers at national and regional levels;

8.

*Option 1:*

*Establishes* an international mechanism to address [social, economic and environmental] loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change [and/or to the impact of the implementation of response measures], including impacts related to extreme weather events and slow onset events,<sup>4</sup> through risk management, insurance, compensation and rehabilitation;

*Decides* to elaborate modalities and procedures for the international mechanism to address loss and damage, for adoption by the Conference of the Parties at its seventeenth session;

*Option 2:*

*Agrees* on the need to strengthen international cooperation and expertise to address [social, economic and environmental] loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change [and/or to the impact of the implementation of response measures], including impacts related to extreme weather events and slow onset events,<sup>5</sup> including through risk management and insurance, as appropriate;

*Requests* Parties to explore whether risk management mechanisms may need to be established or enhanced at subnational, national, regional and international levels, as appropriate;

## Chapter VII: Economic and social consequences of response measures

...

*Reaffirming* the importance of the objective of the Convention, and the relevant principles and provisions of the Convention related to economic and social consequences of response measures, in particular its Articles 2, 3 and 4,

*Recognizing* that the implementation of response measures to mitigate climate change taken by a Party may result in negative economic and social consequences for other Parties, and the need to take into consideration in the implementation of the commitments of the Convention the situation of Parties, particularly developing country Parties, with economies that are vulnerable to the adverse effects of the implementation of measures to respond to climate change,

*Affirming* that economic development is essential for adopting measures to address climate change,

*Affirming* 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 fully into account the legitimate priority needs of developing country Parties for the achievement of sustained economic growth and the eradication of poverty, and the consequences for vulnerable groups, in particular women and children,

[*Recognizing* that the efforts to avoid or minimize the negative impact of response measures should not constrain or hinder progress in addressing climate change,]

*Recognizing* the importance of avoiding and minimizing negative impacts of response measures on social and economic sectors, promoting a just transition of the workforce, the creation of decent work and quality jobs, and contributing to building new capacities for both production and service-related jobs in all sectors, promoting economic growth and sustainable development,

[*Emphasizing* that the issue of the impacts of response measures is related to mitigation, and is separate from adaptation to the adverse effects of climate change,]

[*Noting* the need for developed country Parties to compensate the economies of Africa, least developed countries and small island developing States for environmental, social and economic losses arising from the implementation of climate change response measures in the context of environmental justice and environmental refugees,]

1.

*Option 1:*

*Urges* developed country Parties to strive to implement policies and measures to respond to climate change in such a way as to avoid and minimize negative social and economic consequences for developing country Parties, taking fully into account Article 3 of the Convention;

*Also urges* developed country Parties, in order to assist developing country Parties in addressing negative social and economic consequences, to provide financial resources, including for access to and development and transfer of technology, at agreed full incremental costs in accordance with Article 4, paragraphs 3, 5 and 7, of the Convention, and promote and facilitate the transfer of and access to environmentally sound technologies and know-how to other Parties, particularly developing country Parties, to enable them to implement the provisions of the Convention;

*Option 2:*

*Urges* Parties, in the implementation of measures to mitigate climate change, to take into consideration the economic and social impacts of response measures;

2.

*Option 1:*

*Agrees* that developed country Parties shall not resort to any form of unilateral measures, including fiscal and non-fiscal border trade measures against goods and services from developing country Parties on any grounds related to climate change, including protection and stabilization of climate, emissions leakage and/or cost of environment compliance, recalling the principles and provisions of the Convention, in particular Article 3, paragraphs 1, 4 and 5, Article 4, paragraphs 3 and 7;

*Option 2:*

*Urges* Parties to take into account the principles of the Convention including its Article 3, paragraph 5, in relation to the economic and social consequences of response measures;

*Option 3:*

*Agrees* that Parties, in the pursuit of the objective and implementation of the Convention, shall not resort to any measures, in particular unilateral fiscal or non-fiscal measures applied at the border against goods and services imported from Parties, that constitute a means of arbitrary or unjustified discrimination or a disguised restriction on international trade, taking into account the relevant provisions of the Convention and further recognizing the principle enshrined in Article 3, paragraph 5;

*Agrees* that information relating to response measures should be considered in a structured manner in order to enhance the implementation of Article 4, paragraph 1(g) and (h), of the Convention, recognizing the needs of developing country Parties identified in Article 4, paragraphs 8, 9 and 10;

3.

*Option 1:*

*Decides* to establish a forum to undertake activities including identifying and addressing negative economic and social consequences of response measures of developed country Parties, sharing information, promoting and cooperating on issues relating to response strategies and exploring ways to minimize negative consequences, in particular in developing country Parties;

*Invites* Parties and relevant intergovernmental organizations to submit to the secretariat, by [xx], their views on issues related to paragraph [xx] below for consideration by Parties by [xx] before the seventeenth session of the Conference of the Parties;

*Requests* the secretariat to compile these submissions into a miscellaneous document for consideration at [xx];

Agrees to adopt, at the seventeenth session of the Conference of the Parties, modalities for the operationalization of the forum, defining its mandate, nature, scope, composition, functions, related support, reporting and evaluation, and any other related matters;

*Option 2:*

*Decides* that Parties should cooperate fully to enhance understanding of economic and social consequences of response measures, taking into account the need for information from those affected, and evidence of actual impacts, and of both positive and negative effects, and further decides to consider how existing channels, such as national communications, including the possible submission of supplementary information, as considered by the Subsidiary Body for Implementation, could serve as a platform for discussions on the information provided by Parties.