

# Trade and Climate Change Adaptation: Sustainable Development Objectives for LDCs, SVEs, and SIDS



*Least Developed Countries (LDCs), Small and Vulnerable Economies (SVEs), and Small Islands Developing States (SIDS) are highly vulnerable to climate change physical impacts, including droughts, floods, and hurricanes. Key economic sectors such as fisheries, agriculture, and tourism could face important risks in the context of climate change. Given these countries' high dependence on such sectors for economic growth, food security and livelihood security, climate change poses imperative economic, social, and environmental challenges for LDCs, SVEs, and SIDS. New and effective sources of funding will thus be fundamental in order to address these underlying issues. Moreover, during the 13th UNFCCC Conference of the Parties in Bali, the need for deepening analysis and understanding of the trade and climate change nexus was highlighted. Indeed, trade policy could play an instrumental role in enhancing the adaptation measures taken by LDCs, SVEs, and SIDS. This information note identifies key trade and development areas where trade policy could facilitate climate change adaptation and the attainment of sustainable development objectives.*

## Introduction

Least Developed Countries (LDCs), Small and Vulnerable Economies (SVEs), and Small Islands Developing States (SIDS) are highly vulnerable to climate change physical impacts including droughts, floods, and hurricanes. Moreover, they face significant levels of poverty and dependency on international trade. Indeed, these economies are amongst the most open in the world. However, their share in world exports continues to represent less than 1 per cent (0.9 per cent).

During the 13th UNFCCC Conference of the Parties (COP) in Bali, Trade Ministers highlighted the need for deepening analysis and understanding of the trade and climate change nexus, as well as its sustainable development implications. Both the UNFCCC and the WTO currently recognize the need to promote and achieve sustainable development. Indeed, achieving sustainable levels of development, characterized by conditions of economic and social equity, remains the fundamental foundation for undertaking effective societal responses to trade and climate change adaptation.



Indeed, the UNFCCC recognizes Parties' right to promote sustainable development and stresses that "policies and measures to protect the climate system against human-induced change should be appropriate for the specific conditions of each Party and should be integrated with national development programmes, taking into account that economic development is essential for adopting measures to address climate change." The balance of commitments among Parties to the UNFCCC reflected in Art. 4.7 further states that implementation of UNFCCC commitments "take fully into account that economic and social development and poverty eradication are the first and overriding priorities of the developing country Parties."

In the same vein, the WTO Agreement in its preamble also explicitly indicates that sustainable development is an institutional objective. This preambular statement, according to the WTO Appellate Body in the US-Shrimp Turtle case, is supposed to give "colour, context and shading to the rights and obligations of Members under the WTO Agreement, generally, and under the GATT 1994, in particular."<sup>1</sup>

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

## Climate Change and the Impacts on LDC, SVEs, and SIDS Trade Capacity and Competitiveness

According to the UNFCCC, some of the major possible trade-related (in terms of their impacts of trade-related infrastructure and supply-side) climate adaptation challenges that African LDCs are likely to face:

As a result of global warming, the climate in Africa is predicted to become more variable, and extreme weather events are expected to be more frequent and severe, with increasing risk to health and life. This includes increasing risk of drought and flooding in new areas (Few et al. 2004, Christensen et al. 2007) and inundation due to sea-level rise in the continent's coastal areas (Nicholls 2004; McMichael et al. 2006).

Africa will face increasing water scarcity and stress with a subsequent potential increase of water conflicts as almost all of the 50 river basins in Africa are transboundary (Ashton 2002, De Wit and Jacek 2006). Agricultural production relies mainly on rainfall for irrigation and will be severely compromised in many African countries, particularly for subsistence farmers and in sub-Saharan Africa. Under climate change much agricultural land will be lost, with shorter growing seasons and lower yields. National communications report that climate change will cause a general decline in most of the subsistence crops, e.g. sorghum in Sudan, Ethiopia, Eritrea and Zambia; maize in Ghana; Millet in Sudan; and groundnuts in Gambia. Of the total additional people at risk of hunger due to climate change, although already a large proportion, Africa may well account for the majority by the 2080s (Fischer et al. 2002).

<sup>1</sup> See WTO Appellate Body, Report of the Appellate Body: United States - Import Prohibition of Certain Shrimp and Shrimp Products, WT/DS58/AB/R, 12 October 1998, para.155

Future sea level rise has the potential to cause huge impacts on the African coastlines including the already degraded coral reefs on the Eastern coast. National communications indicate that the coastal infrastructure in 30 percent of Africa's coastal countries, including the Gulf of Guinea, Senegal, Gambia, Egypt, and along the East-Southern African coast, is at risk of partial or complete inundation due to accelerated sea level rise. In Tanzania, a sea level rise of 50 cm would inundate over 2,000 km<sup>2</sup> of land, costing around USD 51 million (UNEP 2002a). Future sea level rise also threatens lagoons and mangrove forests of both eastern and western Africa, and is likely to impact urban centres and ports, such as Cape Town, Maputo, and Dar Es-Salaam.<sup>2</sup>

Moreover, compared to their larger (in economic size and resilience, land area and natural resource endowments, and population size) developing country counterparts, SVEs, including SIDS, are more vulnerable both economically and ecologically to the impacts of climate change.<sup>3</sup> This means that climate change adaptation is a critical challenge to them (especially for many SIDS), unfortunately, "they face severe resource and capacity constraints in meeting it."<sup>4</sup> The reliance of their economies in large part on tourism and agriculture as the main economic activities may create development difficulties for them in the face of climate change.

SIDS' particular vulnerability to natural disasters such as cyclones, hurricanes, typhoons and

other extreme weather events "continue to pose a formidable challenge to sustainable development for most of them"<sup>5</sup> and the impact "is exacerbated as a result of the relatively high ratio of coastal area to the land mass and the relatively large population that lives close to the coasts."<sup>6</sup> Their coastal zones and their fisheries and marine resources are being threatened by "overexploitation, destructive harvesting, land-based pollution, pollution from ships, coastal development, climate change and invasive alien species."<sup>7</sup> SIDS' ecosystems are "small and vulnerable to disruption by climate change or other human activities"<sup>8</sup> with tourism and agriculture projected to be highly impacted.<sup>9</sup>

While tourism for many SIDS is a principal economic activity that brings expanded economic opportunities, as a UN report points out, "tourism and its economic contribution to the economies of small island developing states are threatened by overdevelopment, pollution, loss of diversity, climate change, beach erosion, social and cultural conflict, crime and, more recently, the threat of terrorism."<sup>10</sup> This could imply that economic diversification efforts to develop the tourism sector may not necessarily provide the developmental benefits hoped for if such threats are not taken into account.

Agriculture will also be adversely affected by climate change. Global warming trends leading to temporal and spatial changes in precipitation patterns - including more intense or frequent water-related weather events - are likely to shorten growing seasons in many

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<sup>2</sup> UNFCCC *Climate Change Impacts*, pp. 19-20.

<sup>3</sup> *The SE Literature Review*, para. 16, notes that "[T]he impact in terms of per capita costs and per unit of area damage of strong hurricanes and disruptive earthquakes are much more severe in smaller countries."

<sup>4</sup> *Commonwealth Small States Review*, para. 98.

<sup>5</sup> *SIDS POA Review*, para. 39.

<sup>6</sup> *Commonwealth Small States Review*, para. 96.

<sup>7</sup> *SIDS POA Review*, para. 46.

<sup>8</sup> *Id.*, para. 55.

<sup>9</sup> UNFCCC, *Vulnerability and Adaptation to Climate Change in Small Island Developing States (2007)*, para. 9. (hereafter UNFCCC SIDS Adaptation)

<sup>10</sup> *SIDS POA Review*, para. 14.

tropical SVEs, including SIDS. For many of these countries, “[a]rable land, water resources and biodiversity are already under pressure from increases in population on small island states and the unsustainable use of available natural resources. With climate change, negative impacts on agriculture are predicted; coral reefs will be threatened by increased sea surface temperatures and acidification of the oceans; mangroves will be threatened by sea level rise and an increase in extreme weather events. Water resources are expected to be stressed by changes in precipitation patterns.”<sup>11</sup>

## The Climate Change Financing Gap

The UNFCCC secretariat has estimated that by 2030, developing countries will need US\$28 - 67 billion in funds to enable adaptation to climate change, corresponding to 0.2 - 0.8 per cent of global investment flows, or 0.06 - 0.21 per cent of projected global GDP, in 2030. But current global funding for adaptation is a fraction of this figure and access to these funds for developing countries is often lengthy and complex.<sup>12</sup> Additionally, financing flows to developing countries to enable them to undertake response measures (including technology transfer) to climate change also fall far short of what is required (Table 1).

**Table 1: Comparison of Requirements for and Availability of Financial Resources**

Funding Area	Current Estimates of Investments and Financial Resources Needed in Developing Countries	What is Currently Available or Estimated to be Made Available to Developing Countries under the GEF as an Operating Entity for the UNFCCC's Financial Mechanism
Mitigation	US\$ 176 billion (FCCC/SBI/2007/21, Table 5) US\$86 billion a year by 2015 (0.2% of OECD GDP = 1/10 of OECD military expenditures) (UNDP, HDR 2007/08, p. 194)	US\$ 990 million from the GEF 4 <sup>th</sup> Replenishment for the period 2006-2010, with co-financing to amount to US\$ 1.6518 billion <sup>13</sup> (see FCCC/SBI/2007/21, Table 1)
Adaptation	US\$ 28-67 billion (FCCC/SBI/2007/21, Table 3 and para. 51)	US\$ 20.4 million - GEF Trust Fund: Strategic Priority for on Adaptation US\$ 23.5 million - Special Climate Change Fund (GEF administered) US\$ 147.0 million - Least Developed Countries Fund (GEF administered) US\$ 80-300 million per year for the period 2008-2012 from the 2% share of the proceeds of annual sales of certified emissions reductions from CDM projects - Adaptation Fund  (see FCCC/SBI/2007/21, Table 2 and para. 62)
Technology transfer Emissions reduction-related technology deployment	US\$720 billion (an average of US\$24-26 billion per year) - (FCCC/SBI/2007/21, para. 93 - no breakdown for developing countries; figures based on IEA estimates)	The GEF estimates that 80-100 per cent of GEF climate change mitigation funding fits the technology transfer definitions used by the Convention (see FCCC/SBI/2007/21, Table 2 and para. 62)

<sup>11</sup> UNFCCC SIDS Adaptation, para. 8. On many SIDS, prime agricultural land is located on the coastal plains which are threatened and likely to be affected by sea-level rise. In addition to this, reductions in the availability of freshwater supplies (whether from rainfall or freshwater lenses and aquifers), aside from the impacts of weather events that affect growing cycles, could further damage agricultural production leading to major economic damage and affecting food security.

<sup>12</sup> Climate Change Impacts, p. 6.

<sup>13</sup> This requirement for co-financing needs to be studied and analyzed, with respect to its impacts on access to GEF financing for those developing countries who may not be able to, or may wish not to, have access to co-financing. In many instances, the co-financing requirement has meant that GEF funding is made conditional to co-financing from the World Bank which, with its associated policy conditionalities, may have adverse impacts on the developing country's policy space.

**Table 1: Continued**

Funding Area	Current Estimates of Investments and Financial Resources Needed in Developing Countries	What is Currently Available or Estimated to be Made Available to Developing Countries under the GEF as an Operating Entity for the UNFCCC's Financial Mechanism
Deployment of renewables, biofuels, and nuclear energy technologies Public energy R&D	US\$33 billion per year (FCCC/SBI/2007/21, para. 94 - no breakdown for developing countries; figures based on Stern Review)  US\$20 billion (FCCC/SBI/2007/21, para. 94 - no breakdown for developing countries; figures based on Stern Review)	As at April 2007, US\$ 10.7 million were available from the SCCF for the programme for transfer of technology (FCCC/SBI/2007/21, para. 90)
National communications under the UNFCCC	The need for resources recognized but no estimate provided (FCCC/SBI/2007/21, para. 109)	US\$60.08 million - GEF (FCCC/SBI/2007/21, para. 107)
Capacity-building	The need for resources recognized but no estimate provided (FCCC/SBI/2007/21, para. 121)	More than US\$ 1.46 billion allocated as at June 2002 - GEF support for capacity-building activities in all its focal areas, but no indication as to future amounts (FCCC/SBI/2007/21, paras. 114-116)
Public awareness and outreach	The need for resources recognized but no estimate provided (FCCC/SBI/2007/21, para. 128)	GEF indicated that "it is not possible to quantify the amount that might have been dedicated to such activities under the GEF." (FCCC/SBI/2007/21, para. 126)

Source: South Centre, *Financing the Global Climate Change Response: Suggestions for a Climate Change Fund (CCF)*, SC/GGDP/AN/ENV/3, May 2008, para. 6, Table 1.

## Adapting to Climate Change: the Role of Development-Oriented Trade Policy for LDCs and SVEs, including SIDS

Adapting to climate change entails taking the right measures to reduce the negative effects of climate change (or exploit the positive ones) by making the appropriate adjustments and changes.

The concept of adaptation to climate change is closely linked to the development of adaptive capacity, which refers to changes in processes, practices, or structures to moderate or offset potential damages or to take advantage of opportunities associated with changes in climate. The elements involved in the development of national climate adaptive capacity for climate change include, inter alia:<sup>14</sup>

- economic resilience/diversification
- adequate information on climate risks and impacts

- human resources
- financial resources
- appropriate technology availability
- natural resources management
- disaster risk management
- climate-proofed infrastructure development
- existence of policy and administrative mechanisms for integrating adaptation into economic development policy and planning

All of these elements must be linked by a strong national political determination to carry out climate adaptation as a core component of a country's overall sustainable development strategy.<sup>15</sup> National-level adaptation by developing countries

<sup>14</sup> See e.g. IPCC 4AR Synthesis Report, p. 56, stating that "The capacity to adapt and mitigate is dependent on socio-economic and environmental circumstances and the availability of information and technology."

<sup>15</sup> *Id.*, stating that "Many adaptation actions have multiple drivers, such as economic development and poverty alleviation, and are embedded within broader development, sectoral, regional and local planning initiatives such as water resources planning, coastal defence and disaster risk reduction strategies."



will, in addition to all of the above, also require a strong component of international cooperation as provided for in the UNFCCC from developed countries for support in meeting the costs of adaptation.<sup>16</sup> Finally, effective climate adaptation by developing countries cannot take place unless other climate-adaptive changes are also effected in other areas of international policy such as trade and intellectual property to make these fully supportive of developing countries' efforts to undertake sustainable development.

With respect to ensuring the appropriate adaptation of trade policy to climate change impacts and constraints that may arise in a developing country context, especially for LDCs and SVEs, including SIDS, it will be necessary for policymakers to move away from the existing approach to economic and trade policy. The trade challenges the LDCs and SVEs, including SIDS, face stem in large part from the confluence of economic and trade liberalization policy reforms undertaken in the past three decades that have to a great extent exacerbated these countries' vulnerabilities.

## Adapting Trade-Related Development Policy to Climate Change

### Rethinking trade policy approaches in light of the climate change and development challenges

The climate change and trade policy linkage cannot be approached as a technical issue, but instead as part and parcel of a broader sustainable development policy framework that would require, inter alia:

- Operationalizing sustainable development policy flexibilities and choices for developing countries in the trade and climate change regimes relevant to climate change adaptation;
- Shifting to sustainable, low carbon, and equitable industrial and agricultural production, diversification and development in developing countries;
- Effecting changes to existing international trade disciplines and commitments (including on intellectual property) vis-à-vis climate-friendly technologies and services in order to provide greater policy flexibilities for developing countries;<sup>17</sup>

<sup>16</sup> See UNFCCC, art. 4.4. For example, the IPCC has pointed out that the cost of adaptation to climate change for Africa "could amount to at least 5 to 10% of GDP." See IPCC 4AR Synthesis Report, p. 50.

<sup>17</sup> For example, would compulsory licensing arrangements under the TRIPS Agreement for climate adaptation technology similar to that provided for in the TRIPS and Public Health Decision of 30 August 2003 and the 2005 Amendment to the TRIPS Agreement with respect to pharmaceutical products be useful for purposes of enhancing technology transfers of such technology to developing countries? See [http://www.wto.org/english/tratop\\_e/trips\\_e/implem\\_para6\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/implem_para6_e.htm) and [http://www.wto.org/english/tratop\\_e/trips\\_e/wtl641\\_e.htm](http://www.wto.org/english/tratop_e/trips_e/wtl641_e.htm) for the texts of this Decision and Amendment. Another question is how LDCs can maximize the current extension given to them in 2005 allowing them an additional transition period under Art. 66.1 of the TRIPS Agreement until 1 July 2013 for them to put in place TRIPS Agreement implementing measures to provide protection for trademarks, copyright, patents and other intellectual property (see [http://www.wto.org/english/news\\_e/pres05\\_e/pr424\\_e.htm](http://www.wto.org/english/news_e/pres05_e/pr424_e.htm) for the text of this decision). That is, could this additional transition period be used by LDCs to spur technology transfer of climate-friendly technologies using measures that may be later on TRIPS-inconsistent?

- Putting in place technology transfer mechanisms consistent with the UNFCCC for climate-friendly technologies at conditions that reflect developing country constraints with respect to access and costs and which would allow further technology innovation and adaptation by recipient countries; and
- Operationalizing various options for innovative financing approaches for climate adaptation in developing countries consistent with the provisions of the UNFCCC;
- Improving trade and climate governance and institution-building at the national, regional and international levels (including affected community feedback and accountability mechanisms; South-South regional and cross-regional cooperation on development and climate change).

In the light of their trade-related challenges, and the impacts that climate change is having and will have on the trade competitiveness and economic development prospects of LDCs and SVEs, including SIDS, it is clear that building domestic economies that are resilient, diversified, and more productive in sectors that are not as vulnerable to climate change impacts will be key.<sup>18</sup>

Further trade liberalization by LDCs and SVEs, including SIDS, to imports would not necessarily be the appropriate “climate-adapted” trade policy response to climate change, for two

reasons: (i) LDCs and SVEs, including SIDS, already generally have very open trade regimes, with international trade (both import and export) playing major roles in their economic profile; and (ii) such further liberalization, when placed in the context of the trade policies and measures being applied by their main trading partners (mostly developed countries), might not result in economic diversification but rather further specialization and dependence on agricultural and mineral commodity exports.<sup>19</sup> In short, what would be required by both LDCs and SVEs, including SIDS, with respect to ensuring that their trade and development policies and measures are climate-adapted is the following:

- (i) domestic sustainable development policies incorporating both trade and other economic measures designed to build up domestic productive capacity (utilizing as much as possible low carbon processes, technologies, and know-how) and promote economic diversification to other sectors and activities that are not as vulnerable to climate change<sup>20 21</sup>; and
- (ii) an enabling and coherent international policy environment in which:
  - (a) policy space and flexibility for LDCs and SVEs, including SIDS, in both the trade and climate policy regimes are recognized, reflected, and made as broad as possible;<sup>22</sup>
  - (b) new and additional financial flows, in the form of mandatory financing (as under the UNFCCC’s Art. 4.3, 4.4. and 4.5), are

<sup>18</sup> See e.g. *LDC Report 2008*, p. II, stressing that “LDCs need to improve agricultural productivity and diversify their economies to create non-agricultural employment opportunities.”

<sup>19</sup> See e.g. *Commonwealth Small States Review*, para. 35, pointing out that “‘effective market access’ created through the removal of internal barriers to trade do not necessarily result in effective access for small states exports into developed country markets.”

<sup>20</sup> It should also be noted that under Annex F (Special and Differential Treatment) of the WTO’s 2005 Hong Kong Ministerial Declaration, LDCs are allowed to maintain measures that are inconsistent with the WTO’s Agreement on Trade-Related Investment Measures (TRIMS) such as performance requirements, local content requirements, etc., up to 2020. See [http://www.wto.org/english/thewto\\_e/minist\\_e/min05\\_e/final\\_annex\\_e.htm](http://www.wto.org/english/thewto_e/minist_e/min05_e/final_annex_e.htm)

<sup>21</sup> In this context, information on climate change impacts needs to be translated into “language and timescales relevant to policy makers”, and research on “the potential impacts of climate change needs in-country support to enable information to be improved and passed on to policy makers” and those implementing such policies on the ground. See e.g. Saleemul Huq et al, *Mainstreaming Adaptation to Climate Change in Least Developed Countries (LDCS)*, April 2003, p. 36.

<sup>22</sup> This issue of having trade-related policy space is clearly reflected in various LDC negotiating proposals and submissions in the context of the WTO’s Doha Development Agenda negotiations. SVEs, including SIDS, have also highlighted their need for trade-related policy space. For both LDCs and SVEs, including SIDS, the following comments from the Commonwealth Secretariat with respect to policy space and small states’ trade and development are of great relevance: “The request for appropriate “policy space” is associated with the realization that small states strict adherence to WTO disciplines may, to some extent, limit their room for policy maneuver. Although small states recognize the potential gains from trade liberalization, some compromise needs to be sought to introduce a degree of flexibility, such as for example derogations from certain subsidies disciplines to allow small states to provide incentives for attracting FDI to compensate for the high cost of doing business in small economies and appropriate provisions negotiated on Special Products (SP) and Special Safeguard mechanisms (SSM) for the development of their agricultural sector. The challenge will be to introduce some flexibility while at the same time not hollowing out the rule based trading system, which has significant potential benefits for developing countries.” See *Commonwealth Small States Review*, para. 35. In the context of climate regime policy space, the implementation of the existing balance of commitments under the UNFCCC needs to be enhanced and strengthened, and unilateral initiatives or measures that may be undertaken by the trading partners (mainly developed countries) of the LDCs and SVEs, including SIDS, “to combat climate change ... should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade” (UNFCCC Art. 3.5) especially with respect to the export products of LDCs and SVEs, including SIDS.

provided in a manner that is adequate, predictable, and responsive to developing countries' sustainable development needs and priorities;<sup>23</sup>

- (c) the research, development, production and use of climate-friendly technologies take place under conditions where sharing with, transfers to, and innovation by developing countries of such technologies effectively happen as a result of a coherent and integrated suite of policy measures;
- (d) external support to LDCs and SVEs, including SIDS, to improve their trade competitiveness is provided.<sup>24 25</sup>

### Climate change adaptation of trade-related policy in trade in goods of LDCs and SVEs, including SIDS

With respect to trade in goods (both with respect to agricultural and industrial products), climate-adapted trade-related policymaking could imply rethinking LDCs and SVEs, including SIDS, agricultural development policy and programmes in order to take into account climate change-related impacts on water availability, growing seasons, availability of arable land, and continued

crop suitability, among other things. This could involve promoting shifts in both crops grown and production processes used to factor in climate change-related stressors - e.g. moving from crops that require a lot of water to ones that do not; or utilizing water more efficiently; focusing on new types of crops for both domestic consumption and export depending on changed climatic conditions locally.<sup>26</sup> Domestic policy shifts may need to be effected - e.g. prioritizing agricultural production for food security and industrial production of manufactured goods for domestic consumption over export-oriented production and as a means to lessen vulnerabilities to external trade, economic and environmental shocks.<sup>27</sup>

Attention should be paid to the ancillary agricultural and industrial policy and infrastructure shifts (e.g. the use of subsidies, investment promotion measures, and support for small- and medium-scale enterprises and, if appropriate, state enterprises) that may need to be made to support diversification away from the current agricultural commodities being primarily exported by LDCs and SVEs, including SIDS. Adapting to climate change impacts on infrastructure and settlements

<sup>23</sup> The focus in terms of climate financing (including with respect to adaptation) should be with respect to fulfillment by developed countries of their financing commitments under the UNFCCC, rather than in terms of increasing donor-driven and voluntary aid flows.

<sup>24</sup> For SVEs, including SIDS, the Commonwealth suggested that "[f]ive types of external support were identified as being particularly helpful—agreement on transition periods, provision of financial assistance, action to remove barriers to small states' exports (including agricultural exports), support that addressed capacity and vulnerability problems, and support for participation in the WTO and international trade discussions." These are also equally applicable to LDCs. See Commonwealth Small States Review, para. 26.

<sup>25</sup> External ODA flows to LDCs and SVEs, including SIDS, leave much to be desired in terms of both quantity and quality. In terms of quantity, the LDC Report 2008 (p. IV), for example, has pointed out that aid intended to build productive sectors and economic infrastructure in LDCs "has continued to receive less priority ...[at] just 25 per cent of total ODA commitments to LDCs in 2006" and that such aid, in fact, has been on a decreasing trend. In terms of developmental quality, there is little indication that the current aid system has become more responsive to recipients' needs and requirements - a critique that has also been raised in discussions within the OECD's Development Assistance Committee. Under current arrangements, aid recipients' (many of them LDCs and SVEs) dependence on donors will continue indefinitely, with little prospect of their exiting from aid altogether. Hence there should be a significant shift in the framework for the delivery of aid towards one where developing countries are supported and enabled to exit from aid dependence, which would be the true test of aid effectiveness. The ultimate goal of all aid should be to enable recipients to become aid independent within a reasonable time frame, and this should be the context for evaluating aid effectiveness.

<sup>26</sup> Examples of climate change adaptation with respect to biodiversity, land and water resources relevant to discussions relating to diversification of the agriculture sector were identified in a UNFCCC as follows: "Measures to address the impacts of climate change on biodiversity and land degradation, include: creating land use plans and corresponding enforcement strategies; rainwater harvesting, water demand management, provision of water storage and water efficient household appliances; flood risk analysis with land zoning and flood mitigation actions; strengthening of institutional capacity to enforce land zoning restrictions, including the application of beach setbacks for construction; the use of land use models in order to make farming more efficient and less destructive to the environment and training fishermen and women in sustainable fishing practices. ... Measures that have been suggested to respond to projected decreases in water resources include: incentives to encourage the use of water saving devices; selecting appropriate drought tolerant vegetation; establishing river buffer zones to enhance the resilience of the river and catchment area; updating national water policies, improving water resources management; revising building codes to increase opportunities for rainwater catchment and storage; preparing water resource master plans for islands; and assessing and improving the water supply system." UNFCCC SIDS Adaptation, paras. 74 and 76.

<sup>27</sup> Taking account of new climatic conditions, questions that domestic policymakers in LDCs and SVEs, including SIDS, will need to ask could include the following: (i) what crops should their agricultural sector focus on to enhance food security and economic gains?; (ii) what manufactured goods could their existing industrial sector produce that can be used to lay the foundations for a broader-based domestic industrial development process and lessen exposure to external vulnerabilities?; (iii) what investments in public infrastructure would be required to support climate adaptation?; (iv) how can financial resources be generated both domestically and from external sources to finance broad-based development-oriented climate adaptation?; (v) how can existing international arrangements and commitments, including flexibilities therein, be maximized to support the acquisition and appropriate innovation of technologies to support climate-adapted development?

could include the following: “providing for the scientific and engineering services required to assess vulnerabilities and define priorities, then retrofitting buildings; integrating adaptation into population and resettlement programs; improving the planning and permitting processes to guide coastal zone activities, including regulatory adjustments, awareness raising and enforcement; producing design and construction guidelines and applying them in pilot investments.”<sup>28</sup>

Climate adaptation will also require that trade-related infrastructure (such as ports, roads, storehouses, refrigeration units, etc.) be built or strengthened in preparation for climate impacts (e.g. increased drought and desertification in Africa, increased flooding in Asia, and sea level rise) that may adversely affect such infrastructure. Adaptation should include, where appropriate, the development of alternative infrastructure if existing ones cannot be climate-adapted.

As with LDCs and SVEs primarily dependent on the agricultural commodities export sector, LDCs and SVEs who are dependent on their oil and other mineral commodity exports will need to ensure that income gains coming from the current high prices for oil commodities are invested into improving the diversification level of their economies - e.g. by investing in other productive economic sectors and providing for sufficient resources to implement a strategic industrial development policy.

For many SIDS (both LDCs and SVEs), trade in products from their coastal zones and fisheries are major components of their economic and trade profiles. Climate change impacts on these fragile ecosystems, while difficult to combat, could be better addressed through more robust domestic regimes of resource access, control and management.

Climate-adapted agricultural and industrial diversification will also require securing adequate sources of energy to fuel existing production and expansion into new economic activities while, at the same time, not contributing more than is necessary to global greenhouse gas emissions<sup>29</sup>. Often, LDCs and SVEs, including SIDS, are heavily dependent on imports of oil. However, this dependence on imported oil has economic consequences in terms of further compounding the existing economic and natural vulnerabilities of LDCs and SVEs, including SIDS. The development of domestically-sourced, clean, renewable, sustainable energy sources and infrastructure is, therefore, an important component for climate-adapted agricultural and industrial diversification.

### **Climate change adaptation of trade-related policy in trade in services of LDCs and SVEs, including SIDS**

Economic diversification into the services sectors for LDCs and SVEs, including SIDS, may provide many climate-adaptation and development benefits. Referring to SVEs, the Commonwealth Secretariat pointed out that “[b]y their nature, the service sectors are less vulnerable to the high transport and other infrastructure costs faced by small states, especially the remote ones, and, in contrast to the traditional commodity exports, have robust long-term market prospects.”<sup>30</sup> Services sector expansion and diversification in a manner that is climate-adapted will, however, require not only increased domestic public and private sector investment into upgrading the country’s human resources (e.g. improvements in education) but also investments in improving and climate-proofing the associated infrastructure for specific services sub-sectors and their various modes of supply.

For example, climate-adapted expansion of tourism services will require strategic adaptation of

<sup>28</sup> UNFCCC SIDS Adaptation, para. 75.

<sup>29</sup> LDCs and SVEs, including SIDS, are currently among the lowest per capita greenhouse gas emitters, with an average of less than 1 ton of carbon dioxide equivalent per year.

<sup>30</sup> Commonwealth Small States Review, para. 129.



existing tourism-related infrastructure to take into account climate change impacts (e.g. greater frequency of extreme weather events, loss of terrestrial and marine biodiversity, etc.). In the same vein, climate-adapted expansion of other services (such as offshore financial, entertainment services, medical-related services, Internet commerce, software development, tertiary education for foreign students) will require substantial investments into climate-proofing existing and new information and communications technology infrastructure. This will depend, in turn, on ensuring that the associated “brick and mortar” infrastructure needed for such technology - e.g. data server farms, the energy grid, etc. - are also climate-adapted.

### **Climate change adaptation of the trade-related policies of major trading partners with respect to LDCs and SVEs, including SIDS**

The major trading partners of LDCs and SVEs, including SIDS, should support climate-adapted agricultural and industrial sector diversification by LDCs and SVEs, including SIDS, including but not limited to the provision of financial and technology transfer assistance for such diversification and

immediate action to remove barriers (both tariff and non-tariff) to these countries’ exports (especially for those to be developed under the diversification programme). This would mean, for example, that unilateral trade measures being proposed in some developed countries to combat climate change by imposing carbon taxes or duties on the embedded carbon content of imports insofar as such imports are from LDCs and SVEs, including SIDS, or else be carefully designed so as not to impose disguised restrictions or arbitrary or unjustifiable discrimination against the trade of LDCs and SVEs, including SIDS.

Developed country subsidies that support unfair competition with the products or production capacity of LDCs and SVEs, including SIDS, whether in agriculture, industrial goods, or even fisheries, should be reduced or eliminated.

Support should also be provided in terms of recognizing and allowing for LDCs and SVEs’ need flexibility with respect to the policy shifts and measures for the agricultural and industrial diversification programme. There should be no pressure exerted to required LDCs and SVEs, including SIDS, to provide for additional market

access (whether in the agricultural or industrial goods or services sectors) to their trading partners that may not be appropriate in the context of the LDCs and SVEs' requirements for policy space for climate-adaptation of their trade and industrial policy. Any market access opening that LDCs and SVEs, including SIDS, may wish to undertake should be voluntary and flexible to take into account possible changing economic and climatic conditions.

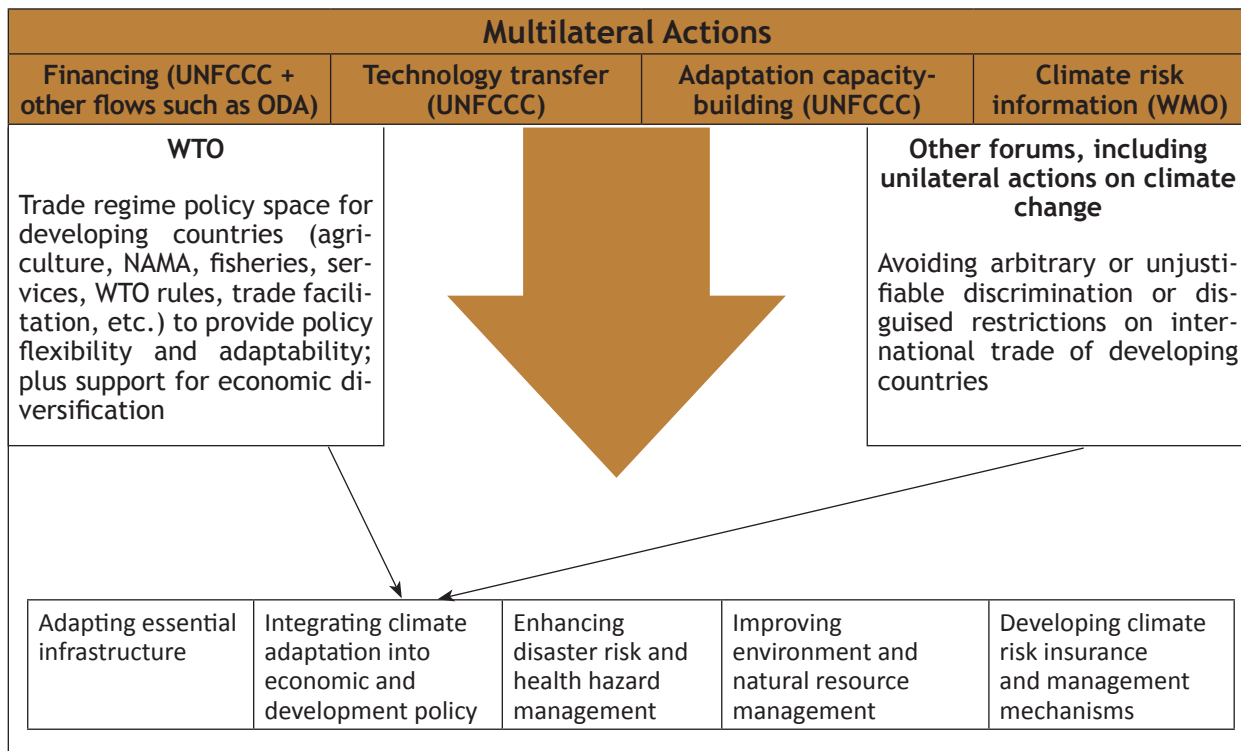
The trade-related actions above should cohere with and enhance the mandatory actions that need to be taken by developed countries under the UNFCCC with respect to the provision of mandatory financing and technology transfers with respect to adaptation, particular in relation to LDCs and SVEs<sup>31</sup>, including SIDS. For example, developed country financial support under the UNFCCC should be provided to LDCs and SVEs, including SIDS,

in relation to their implementation of specific adaptation measures that have already been planned by LDCs in the context of their individual National Action Plans for Adaptation (NAPAs) under the UNFCCC (see Table 2 on the next page).

The interrelationship between domestic climate adaptation trade-policy actions that LDCs and SVEs, including SIDS, can undertake and the supportive actions to be done by their major trading partners as discussed above could thus be diagrammed as follows (Figure 1).

Finally, in relation to the WTO negotiations, a genuine effort to contribute on trade and climate issues would involve responding effectively to developing country proposals for an integrated and development-oriented approach in determining the negotiated outcomes of the Doha Development Agenda.

**Figure 1: Relationship between Domestic and International Climate Change Adaptation Actions**



<sup>31</sup> It should be noted, however, that the term "vulnerable" has specific political and technical connotations in the UNFCCC context and is usually qualified with "most" or "particularly". References to this criterion are found all over the UNFCCC (preambular para. 19), Art. 3.2 for adaptation, Art. 4.4 on costs for adaptation, the listing in Art. 4.8, as differentiated in the use of the term "vulnerable" in UNFCCC Art. 4.10 and Art. 12.8 of the Kyoto Protocol. This distinction in terms of the use of the "vulnerable" criterion between the two different fora of discussions (climate change and WTO), in particular when referring to adaptation to the adverse effects of climate change.

**Table 2: Selection Examples of Planned Adaptation by Sector**

Sector	Adaptation option/strategy	Underlying policy framework	Key constraints and opportunities to implementation (Normal font = constraints; Italics = opportunities)
Water {WGI 5.5, 16.4; Tables 3.5, 11.6, 17.1}	Expanded rainwater harvesting; water storage and conservation techniques; water reuse; desalination; water-use and irrigation efficiency	National water policies and integrated water resources management; water-related hazards management	Financial, human resources and physical barriers; integrated water resources management; synergies with other sectors
Agriculture {WGI 10.5, 13.5; Table 10.8}	Adjustment of planting dates and crop variety; crop relocation; improved land management, e.g. erosion control and soil protection through tree planting	R&D policies; institutional reform; land tenure and land reform; training; capacity building; crop insurance; financial incentives, e.g. subsidies and tax credits	Technological and financial constraints; access to new varieties; markets; longer growing season in higher latitudes; revenues from 'new' products
Infrastructure/ settlement (including coastal zones) {WGI 3.6, 11.4; Tables 6.11, 17.1}	Relocation; seawalls and storm surge barriers; dune reinforcement; land acquisition and creation of marshlands/wetlands as buffer against sea level rise and flooding; protection of existing natural barriers	Standards and regulations that integrate climate change considerations into design; land-use policies; building codes; insurance	Financial and technological barriers; availability of relocation space; integrated policies and management; synergies with sustainable development goals
Human health {WGI 14.5, Table 10.8}	Heat-health action plans; emergency medical services; improved climate-sensitive disease surveillance and control; safe water and improved sanitation	Public health policies that recognise climate risk; strengthen health services; regional and international cooperation	Limits to human tolerance (vulnerable groups); knowledge limitations; financial capacity; upgraded health services; improved quality of life
Tourism {WGI 12.5, 15.5, 17.5; Table 17.1}	Diversification of tourism attractions and revenues; shifting ski slopes to higher altitudes and glaciers; artificial snow-making	Integrated planning (e.g. carrying capacity; linkages with other sectors); financial incentives, e.g. subsidies and tax credits	Appeal/marketing of new attractions; financial and logistical challenges; potential adverse impact on other sectors (e.g. artificial snow-making may increase energy use); revenues from 'new' attractions; involvement of wider group of stakeholders
Transport {WGI 7.6, 17.2}	Realignment/relocation; design standards and planning for roads, rail and other infrastructure to cope with warming and drainage	Integrating climate change considerations into national transport policy; investment in R&D for special situations, e.g. permafrost areas	Financial and technological barriers; availability of less vulnerable routes; improved technologies and integration with key sectors (e.g. energy)
Energy {WGI 7.4, 16.2}	Strengthening of overhead transmission and distribution infrastructure; underground cabling for utilities; energy efficiency; use of renewable sources; reduced dependence on single sources of energy	National energy policies, regulations, and fiscal and financial incentives to encourage use of alternative sources; incorporating climate change in design standards	Access to viable alternatives; financial and technological barriers; acceptance of new technologies; stimulation of new technologies; use of local resources

Source: IPCC 4AR Synthesis Report, p. 57.

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This research was supported by DANIDA (Denmark); Ministry of Foreign Affairs of Finland; the Department for International Development (U.K.); the Ministry for Foreign Affairs of Sweden; the Ministry of Foreign Affairs of Norway; and the Commonwealth Secretariat.

Information Note by Gloria Carrión, ICTSD. Original paper by Vicente Paolo B. Yu III, South Centre, entitled "Sustainable Development-Oriented Responses to Trade and Adaptation Challenges in LDCs and SVEs, including SIDs."

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