

trade hot topics

Competitiveness Impacts of Climate Change on LDCs' export trade

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Background

Africa hosts 33 of the 49 least developed countries (LDCs) widely known to have, among other things: high incidence of poverty; weak trade supportive infrastructure, institutions and supply capacities; high export concentration into agriculture, resource extraction, fisheries and tourism; and low capacity to diversify their production and exports. Twelve African LDCs are also landlocked and therefore face high transit- transport costs, compounding their ability to produce and trade competitively in regional and global markets.

Climate change is now posing particular challenges for development prospects of LDCs in Africa. While LDCs have contributed the least to causes of global warming, they are the most vulnerable countries to the consequences of climate change. World Bank estimates in 2010 indicate that up to 80 per cent damages from climate change will be borne by developing countries given their production and trade in products highly dependent on weather conditions, and the lack of adequate capacity to identify and cope with risks and economic impacts of climate change. These include increased incidence of extreme weather events, prolonged

droughts, heavy rains and associated floods, severe storms and fluctuations in established weather patterns such as monsoons, all of which have adverse impacts on agriculture in general, and in turn on food security and agricultural commodity production. As well, low-lying coastal areas will be affected by a rise in sea levels with considerable potential for increased flooding, erosion, and damages to transport, port and other infrastructure. Measures to deal with climate challenges (for example, capacity-building, climate-proof infrastructure, or other strategies) would involve significant costs and pose a development challenges to weaker developing countries like LDCs.

This issue of *Commonwealth Trade Hot Topics* considers the competitiveness aspect of the impact of climate change on exports from African LDCs. While LDCs are known to be vulnerable to climate change consequences, relatively little attention has focused on trade impacts and the implications for export-led growth and development prospects. Key issues discussed in this brief are of particular importance for consideration in the Fourth United Nations Conference on LDCs due to be held in Istanbul, Turkey, in May 2011.

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Competitiveness vulnerability of the LDC exports to climate change

For many LDCs with small domestic markets, low rates of domestic saving and investment, the export-led growth represents one of the key pathways for poverty reduction. Specifically, the Brussels Plan of Action (BPoA) of 2001 recognised both the potential for trade's contribution to growth and development in LDCs and also challenges to benefit from this potential. In this regard, the BPoA recommended a suite of actions for enhancing the role of trade in development, and for building productive capacities to make global trading system benefit and work for LDCs. Strategies to harness trade as an engine of growth and development rely heavily not only on increased market access for exports of interest to LDCs, but also on improving the competitiveness, supply and productive capacity of exporters. These fundamental drivers will all be affected by climate change. While the BPoA recognised the development challenges posed by the vulnerability of LDCs to impacts of environmental degradation, the intervening decade has provided a gloomy picture regarding potential impacts of climate change in general and specifically on weaker developing countries dependent on agricultural resources. As such, revisiting these is in order by focusing on those sectors most important to LDCs but highly vulnerable to potential impacts of climate change: agriculture, fisheries, tourism, etc.

Agriculture

Agriculture is of critical importance to many African LDCs including for employment and income generation, supply of inputs into agro-processing manufacturing activities, sources of government revenue, foreign exchange, food security and livelihoods. In a large number of African LDCs, for example, agricultural products amount to either more than or close to half of the value of merchandise exports. Taking into account the subsistence farming, agriculture employs as high as 80 per cent of the workforce in African LDCs.

It is clear that climate change impacts on economies of African LDCs heavily dependent on agriculture are of increasing concern. The majority of crops in Africa are generally rain-fed and/or cultivated in marginal lands while the capacity and institutions to assist in adapting to climate change are underdeveloped. In the arid and semi-arid zones of North and Southern Africa, expected warming of over 3–4°C combined with

predictions of lower precipitation imply more frequent drought events and increased moisture stress. The upshot is an increase in arid and semi-arid land in Africa, mostly on the northern and southern edges of the tropical humid zones, with some predicting a 5–8 per cent increase in land unsuitable for rain-fed agriculture (30 to 60 million hectares) by 2080. Wheat and maize in Southern and North Africa fare particularly poorly under these circumstances. More frequent extreme weather events also mean more unpredictable yields for products like fruits, groundnuts and soybeans that are sensitive to even a few days of extreme heat. Sea-level rise will likely impact coastal agriculture as inundation and salinity effects become more serious. Equatorial Guinea, for example, is predicted to lose up to 30 per cent of its rice cultivation to inundation under sea-level rise by the end of the century.

Some regions and countries, on the other hand, are likely to experience potential benefits from increased rainfall and longer growing seasons. For example, Eastern Africa seems likely to receive more rainfall, and coastal and highland terrain is not subject to such powerful warming trends. Ethiopian highlands and parts of Mozambique in particular stand to lengthen their growing seasons, while recent analysis has predicted increases in rice and maize production in Rwanda of 16 per cent and 15 per cent respectively. These conditions could lead to new export trade opportunities.

Without policies that increase access to irrigation, credit and production-related infrastructure, the impacts of climate change may drive smallholder staple producers off land. This could lead to foreign or domestic investors buying or leasing land that is no longer suitable for rain-fed and mixed farming, and adopting more input-intensive practices that are less sensitive to climate change impacts. This is already happening to some extent in the fresh vegetable export market from East and Southern Africa — a trend with complex implications for development, poverty alleviation and the environment.

Climate change impacts on agriculture go beyond physical impacts of reduction in yields to include the impacts of policies taken to address climate change in key market countries. In particular, the increasing number of standards including product labelling that calculate embodied carbon in consumer goods offers both risks and opportunities. The risk lies in those schemes that

unfairly focus on the carbon emitted in transport—so-called ‘food miles’ labels. The opportunity lies in schemes that perform a broader scope life-cycle assessment, since over the whole life of the product many African exports compare favourably to high-input energy-intensive Northern competitors.

Extractives

Export concentration is very high in those African LDCs that rely heavily on the extractive sectors (primarily oil, gas and mining). In a dozen of African LDCs, goods from this sector account for over 50 per cent of export revenues, with 80 per cent of export earnings in seven of them. For large-scale oil exporters such as Angola, Chad and Equatorial Guinea extractive exports are a large part of GDP, totalling 73 per cent, 46 per cent and 34 per cent of GDP respectively in 2008.

Oil and gas production itself is not significantly impacted by climate change (though there may be concerns about water availability). Rather, demand in export markets is potentially affected by climate change *policies*, or ‘response measures’. Whether through carbon taxes, cap and trade regimes or energy efficiency measures, Annex I countries will inevitably reduce their demand for fossil fuel imports, meaning lower prices. Depending on global price elasticity of demand, this may or may not mean significant impacts on export revenues in this sector, though modelling surveyed by the Intergovernmental Panel on Climate Change had predicted export revenue losses of up to 13 per cent in the oil sector. However, it is worth noting that, while oil revenues seem likely to go down, gas markets may be quite different, since gas is seen as a relatively climate-friendly fuel.

Fisheries

Fisheries are important for some African LDCs, figuring in the top three export products of The Gambia, Madagascar, Mauritania, Senegal, Uganda and the United Republic of Tanzania. Uganda has been particularly successful in diversifying into fish processing, based on inland freshwater fisheries. Export of fisheries services, via European Union marine fisheries agreements, is also important to some LDCs’ economies. For Guinea-Bissau, São Tomé and Príncipe, and Mauritania, for example, these agreements represent more than 5 per cent of the value of total exports.

Fisheries are sensitive to a number of climate change-related impacts. Ocean acidification from increased atmospheric carbon levels results in

slowed rate of growth of coral, or coral die-off. As coral provides spawning grounds and shelter for juvenile of many fish species, this would result in decreased production. Similar impacts would come from more frequent and extreme ocean warming events that cause coral bleaching. Other impacts from ocean warming include: poleward shifts of fish populations, or collapse of marine populations that cannot shift; changes in marine upwelling or zooplankton composition, affecting fish food supply; and increased invasive species, diseases and algal blooms. All of these potentially lower productivity of fisheries.

Sea-level rise may involve salt water intrusion into freshwater habitats, reducing viability of some freshwater species. It may also involve loss of coastal habitats such as mangrove swamps, lagoons, etc., again meaning reduced viability and production of the species that depend on them. Freshwater habitats will be disturbed by lowering of water levels resulting from a number of climate-related drivers: increased evaporation as a function of warming; decreased inflow as a function of decreased rainfall; and decreased glacial and ice feed as a result of warming and melting. All these raise concerns to countries heavily dependent on fishery resources for export and government revenues, employment, food security and other livelihoods.

There may also be positive effects depending on the species and habitat. Warming between 3—5°C could increase the productivity of the Gambia River by 13 to 21 per cent. Shrimp, in particular, would benefit from the temperature change, other things being equal, while catfish and herring would suffer.

Tourism

Tourism services are important for many African LDCs in terms of foreign exchange earnings, employment, and linkages to other sectors in the economy. Tourism is also critical to LDCs as an avenue for economic and export diversification. For some countries the revenues involved are significant; in both The Gambia and Eritrea, for example, the figures are multiples of the revenues obtained through merchandise trade.

Climate change has several, mostly negative, potential impacts on tourism in the African LDCs. Coral bleaching as an impact has been discussed above; with increased variability and increased warming it is likely that bleaching and eventual die-off will become a more regular event for the reefs

of Africa. Those tourist destinations that feature diving and snorkelling as attractions will lose business as a result. For coastal countries, coastal tourism involves significant investments in infrastructure close to sea level (hotels, amenities). In South-East Africa these may be subject to increased tropical storms and sea surges made higher by sea-level rise. In West Africa, sea-level rise is not expected to be as significant, but would eventually (by end of the century) become a concern for coastal infrastructure. Game parks are a big draw for tourists in a number of African LDCs. In the medium term most of these parks face potential species change, and extinction of current species unable to migrate to escape increased warming and water scarcity.

Other impacts

A number of climate-related impacts do not fall on a particular sector, but rather they constitute challenges for many types of trade-related economic activity, particularly activities focused on economic diversification away from the traditional export streams surveyed above. In this regard, transport costs, for example, are likely to rise as a result of many factors. Increased warming and more frequent extreme events will bring damage to road infrastructure meaning longer transport times and increased operating costs. Storm surges and sea-level rise will mean increased costs to adapt or repair coastal trade-related infrastructure such as port facilities, with resulting increased port and transit fees. Aviation and maritime shipping may be targeted with climate fees as part of a post-2012 climate regime, adding to the costs of shipping across the board. On the other hand, decreased demand from Annex I countries for fossil fuels — the result of domestic actions to reduce greenhouse gas emissions — would lower the price of aviation fuel and bunker fuel, which would counteract these trends somewhat.

Any form of business or activity that is water-intensive (for example, depending on water cooling) will face challenges in North and Southern Africa, and potentially in West Africa as rainfall there decreases. In these regions, any business that relied heavily on electricity would be vulnerable to the impacts of climate change on hydroelectric generating capacity. In a number of countries major hydroelectric projects are planned or under way as part of an effort to relieve energy shortages, supply the foundation for industry and provide export revenues. In Eastern Africa, these investments are

probably safe, but elsewhere they may be relying on misleading projections of rainfall based on current and historical trends. Power interruptions are painful for many types of businesses, particularly those that run continuous operations, and if reduced rainfall makes them more frequent they may constitute a limit on competitiveness and economic diversification into non-traditional sectors.

Developments in climate policy: risks and opportunities

The multilateral negotiations on a post-2012 regime to address climate change appear stalled at best and at worst they are mired in crisis with no obvious way forward. Either way, there will be no multilateral commitment to hard action in the near term. The progress made at Cancún talks is welcome but does little to broach fundamental and divisive differences between the major players. The implications are, first, that the worst-case scenario predictions of climate impacts are more likely to be accurate, and second, that the centre of gravity for addressing climate change is devolving to the regional and national levels. Lack of multilateral action makes it much more likely that tools such as standards, labelling and border measures are likely to be prominently used in addressing climate change challenges.

All border carbon adjustment schemes proposed to date exempt LDCs from coverage, but developments in standards and labelling may be a concern, as noted above. Developed country policies aimed at reducing greenhouse gas emissions may create new trade and investment opportunities for African LDC exporters. One of the most promising is the cultivation and refining of biofuel feedstocks, taking advantage of regulation-driven markets. The EU's Biofuel Directive, for example, is estimated to significantly raise its demand for imports of biofuels: by 2020, some 9 million tonnes of bioethanol and 1.6 million tonnes of biodiesel.

There may also be opportunities for international financing aimed at reducing the vulnerability of African LDC exports to climate change impacts. The UNFCCC's (United Nations Framework Convention on Climate Change) Adaptation Fund has a mandate to reduce vulnerability to climate change, and is funded by a 2 per cent levy on all credits issued under the Kyoto Protocol's Clean Development Mechanism (CDM). With a share of credits to date worth potentially over \$100 million, this is a significant resource though not close to what is needed. The Fund's key drawback is its dependence

on the CDM, the future of which is in limbo as the negotiations falter. Whatever the outcome of the negotiations, it is likely that they will include credits for LDCs' nationally appropriate mitigation actions (NAMAs). If these extend beyond the project-by-project level to policy initiatives such as avoiding deforestation, encouraging climate friendly land use in agriculture or achieving energy efficiency through regulation, they may be significant sources of revenue and support for LDC governments, if not a direct benefit to most exporters.

The UNFCCC's LDC Fund may also be of considerable interest. To date, it has focused mostly on building capacity for adaptation planning at the national level. Unlike the Adaptation Fund, this body is not directly tied to the outcome of the post-2012 negotiations. However, it does not have the kind of stable funding base that the Adaptation Fund had. It is worth noting that neither fund to date has focused much on the competitiveness impacts of climate change, but they certainly could do so, given their mandates.

Outside the UNFCCC there will likely be funding available for avoided deforestation under the UN-REDD programme (reduced emissions from deforestation and forest degradation in developing countries). Any such support would be of interest to LDCs with significant forest cover, and in particular to the countries of the Congo basin. A final source of potential opportunity for African LDCs is the committed financing under the Copenhagen Accord (which has a complicated relationship to the UNFCCC negotiations). Developed country signatories committed to providing new and additional resources equal to US\$30 billion between 2010 and 2012, and to "mobilising jointly" with the private sector US\$100 billion per year by 2020 to address the needs of developing countries. The sources and governance structures are not yet clear, but there are grounds to hope that some portion of this funding could be directed to the needs of African LDC export sectors.

Conclusions

This century will see significant climate change impacts in African LDCs, and those impacts will affect their development prospects through trade—in some cases for the better, but mostly for the worse. Most analysts agree that capacity to adapt in those countries is inadequate. The result is that LDC export sectors in Africa (and probably worldwide, if not in the same measure) are vulnerable to climate change impacts.

The LDC IV Conference provides the opportunity for assessing the results of the BPoA and for adopting new measures and strategies aimed at achieving sustainable development of LDCs into the next decade. Given the importance of trade to LDCs, one clear area of need is for trade-related strategies to address climate change related risks and vulnerabilities. This does not mean abandoning existing commitments and actions but rather climate change adds an important new dimension through which existing plans must be filtered to see if they still make sense. In this regard, suggested priorities include:

- LDCs and development partners should collaborate to undertake country-by-country assessment of the risks posed by climate change to the competitiveness of existing exports, and of the opportunities for new exports — a sort of African *Stern Report* with a trade focus.
- Development partners should help in building in-country capacity to enable this sort of assessment. Current regional models of climate change impacts are mostly inadequate, and there are not enough trained modellers and scientists to support an in-depth process.
- LDCs should leverage support from adaptation-related instruments such as the UNFCCC's LDC Fund and the Adaptation Fund. To date these have not focused on export competitiveness impacts, and are thus missing a major opportunity.
- Development partners should assist LDCs by developing and transferring technologies that are helpful in addressing climate-related impacts.
- Development partners should commit to internationally agreed best practice in their use of trade-restricting measures (such as border carbon adjustment, carbon footprint standards and labelling) to further climate change objectives. Specifically, they should take into consideration the special needs and difficulties faced by LDCs.
- Specific sectors deserve increased attention in the form of dedicated research programmes. Agriculture is already the focus of much adaptation-related work. However, the vulnerability of other sectors particularly the tourism industry and hydro-based power systems should not be overlooked.

International Trade & Regional Co-operation Section at the Commonwealth Secretariat

This Trade Hot Topic is brought out by the International Trade and Regional Co-operation (ITRC) Section of the Economic Affairs Division (EAD) of the Commonwealth Secretariat, which is the main intergovernmental agency of the Commonwealth — an association of 54 independent states, comprising large and small, developed and developing, landlocked and island economies — facilitating consultation and co-operation among member governments and countries in the common interest of their peoples and in the promotion of international consensus-building.

ITRC is entrusted with the responsibilities of undertaking policy-oriented research and analysis on trade and development issues and providing informed inputs into the related discourses involving Commonwealth members. The ITRC approach is to scan the trade and development landscape for areas where orthodox approaches are ineffective or where there are public policy failures or gaps, and to seek heterodox approaches to address those. Its work plan is flexible to enable quick response to emerging issues in the international trading environment that impact particularly on two highly vulnerable Commonwealth constituencies — least developed countries (LDCs) and small states.

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- It supports Commonwealth developing members in their negotiation of multilateral and regional trade agreements that promote developmentfriendly outcomes, notably their economic growth through expanded trade.
- It conducts policy research and consultations increase understanding of the changing of the international trading environment and of policy options for successful adaptation.
- It contributes to the processes involving the multilateral and bilateral trade regimes that advance the more beneficial participation of Commonwealth developing country members, particularly small states and LDCs.

ITRC Recent Activities

ITRC's most recent activities focus on assisting member states in the WTO Doha Round and the Economic Partnership Agreement (EPA) negotiations involving the African, Caribbean and Pacific countries (ACP) the European Union (EU), undertaking analytical research on a range of trade policy and development issues, and supporting workshops/dialogues for facilitating consensus-building on issues of Commonwealth members' interest, exchange of ideas, and disseminating results from informed analysis.

Selected Recent Meetings/Workshops supported by ITRC

16 September 2010: Session by the Commonwealth Secretariat at the WTO Public Forum 2010, on 'Africa in international trade: impediments and opportunities', WTO Headquarters, Geneva, Switzerland.

28 June 2010: Consultation Meeting on WTO Accession, held in Brussels, Belgium

26 June 2010: Workshop on Policy Barriers in Intra-regional Trade in South Asia, held in Dhaka, Bangladesh

14-15 June 2010: High Level Workshop on Aid for Trade in East African Community countries, held in Dar-es-Salaam, Tanzania

3-4 June 2010: Trade policy Workshop with the Members of Parliaments in the Pacific, held in Samoa

27-28 May 2010: Trade policy Workshop with East African Members of Parliaments, held in Arusha, Tanzania

4 May 2010: Workshop on Potential Supply Chains in South Asian Textiles and Clothing, held in Colombo, Sri Lanka

3-4 May 2010: Commonwealth Investment Experts Group Meeting for the Pacific, held in Port Vila, Vanuatu

3 April 2010: Workshop on Developing Supply Chains in the Textile and Clothing Industries in South Asia, held in Dhaka, Bangladesh

15-16 March 2010: Commonwealth Roundtable - Regional Trading & Integration Arrangements, held in Hampshire, UK

2 November 2009: High-Level Meeting for WTO Representative of ACP Missions, held in Geneva, Switzerland

26 October 2009: Discussion meeting with the WTO's Geneva Week Participants, held in Geneva, Switzerland

Selected ITRC Publications

Cali, M with Kennan, J (2010). 'The Global Financial Crisis and Trade Prospects in Small States', Economic Paper, London: Commonwealth Secretariat.

Milner, C et al. (2010). Policy Responses to Trade Preference Erosion: Options for Developing Countries. London: Commonwealth Secretariat

Grynberg, R and Kabuleeta, P (forthcoming). Investment and Economic Partnership Agreements: Issues for ACP Negotiators. London: Commonwealth Secretariat.

Jones, E et al. (2009). Manoeuvring at the Margins: Constraints Faced by Small States in International Trade Negotiations. London: Commonwealth Secretariat.

Razzaque, M A (ed) (2009). Trade, Migration and Labour Mobility. London: Cameron May.

Srinivasan, T N (2009). LDCs, Landlocked Developing Countries and Small States in the Global Economic System. London: Commonwealth Secretariat.

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Winters, L A et al. (2009). An EU-India Free Trade Agreement: Reflections on the Implications for Excluded Countries. London: Commonwealth Secretariat.

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Milner, Chris (2008). Trading on Commonwealth Ties: A Review of the Structure of Commonwealth Trade and the Scope for Developing Linkages and Trade in the Commonwealth. London: Commonwealth Secretariat.

Turner, L (2008). 'Quantifying Aid for Trade: A Case Study of Tanzania'. Economic Paper, London: Commonwealth Secretariat.

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Grynberg, Roman and Bilal, Sanoussi (eds) (2007). Navigating New Waters: A Reader on ACP-EU Trade Negotiations. London: Commonwealth Secretariat.

Mbirimi, Ivan (ed) (2007). After Hong Kong: Some Key Trade Issues for Developing Countries. London: Commonwealth Secretariat.

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