

Diversifying exports in the context of climate change

By Jodie Keane

The diversification of exports is a crucial part of the process of development and structural change. It is particularly important for small countries, and most of the remaining Least Developed Countries (LDCs) are just that: small, economically and geographically. It is, however, a difficult process and may become more difficult because of the physical impacts of climate change. New regulatory measures to reduce global greenhouse gas (GHG) emissions may impose new constraints. But there are also some new opportunities.

Given that switches of dynamic comparative advantage, and the ability of developing countries to tap into related production networks, have formed the basis of most successful export diversification strategies in the past – measured by growth, structural change and poverty reduction – this Background Note explores how the physical and regulatory impacts of climate change might affect these strategies in the future. Will climate change hinder export-oriented growth strategies? Where are the new opportunities? How do existing strategies need to adapt? And how can the rules of the UN Framework Convention on Climate Change (UNFCCC) and the World Trade Organization (WTO), in addition to aid from donors, better support these processes?

The Background Note aims to shed light on such questions. It highlights the importance of coherence between the climate change and trade regimes for export-oriented growth and development. It draws attention to how the physical impacts of climate change on production structures both accentuate the need for diversification and add new challenges. But it also highlights new opportunities that may arise from the regulatory impacts of climate change. First, the Background Note reflects on export diversification strategies in the past; second, it draws attention to physical and regulatory constraints that will affect

export diversification strategies in the future; and finally, it discusses how existing strategies may need to adapt and the regulatory constraints be overcome.

Export diversification and new constraints

On the one hand, trade flows have become progressively more fragmented as countries have become increasingly integrated into the global economy over recent decades. On the other, they have also become more coordinated within global value chains and other types of regional production networks. In this context, comparative advantage is a dynamic concept, with temporal and spatial dimensions, that is also influenced by policy.

The success of export-orientated growth during the post-war period was underpinned by shifting patterns of production, open markets and trade preferences. The successful experience of the newly industrialised countries (NICs) was used in the 1980s to justify recommendations that other late industrialisers move away from the substitution of imported products for domestic production towards outward orientation to benefit from external economies through trade. However, despite some successes, the ability of many low-income countries to tap into the modern export sector has been limited and remains, at best, fragile. Efforts to diversify exports have not been totally successful, even under favourable economic conditions and in the absence of climate change.

The 2000s have been characterised by shifting patterns of consumption as the purchasing power of the NICs and other large emerging economies have increased in weight relative to traditional Northern markets. These changes have manifested themselves, for example, in increased commodity prices that damage incentives to diversify exports. These changing patterns of demand and supply have, to

some extent, been accelerated by the impacts of the global financial crisis. But they also come at a time of changing North-South trade relations more generally, for example, given the proliferation of regional trade agreements.

Recent contributions to the literature on the process of export diversification offer some insights into how we could have expected production structures to evolve in the absence of major climate changes and the implications for policy (for example, Hesse, 2009). For example, the product proximity literature shows that the probability that a country will move into the production of one good compared to another is conditional on existing productive capabilities. What countries export matters: those countries that export more sophisticated products may grow faster. However, the conclusions from this literature should be interpreted cautiously: research on the processes by which export diversification takes place at the company and sectoral level often ignores more macro- and policy-related constraints, as well as opportunities, such as the role of trade preferences and the role of foreign direct investment (FDI).

Successful experiences of export diversification are highly country and temporally specific. The processes by which diversification of productive structures takes place depends on the external trade environment and countries' ability to both adopt, and adapt to, relevant new imported technologies and match them to their factor endowments. Therefore, although some ingredients from successful export diversification strategies in the past may be relevant, late industrialisers now face a different trade environment. They also need to adopt and adapt to different technologies.

On top of the traditional challenges to export diversification strategies comes climate change. Its effects include not only the need to adjust to physical effects – such as changes in precipitation patterns, increases in global temperatures and the likelihood of extreme events – but also regulatory changes related to the mitigation of further temperature increases. Strategies to mitigate climate change taken by developed countries have led to an increasing focus on the processes and methods by which goods are produced. This suggests that the impacts of climate change will not only be physical, but also regulatory, and the severity of each on exporters will be product and country specific. The compound effect of all of these changes may mean that for some types of low-income countries the routes used in the past to diversify their export and product base may no longer be viable. This means that new strategies need to be designed.

The physical and regulatory challenges of climate change

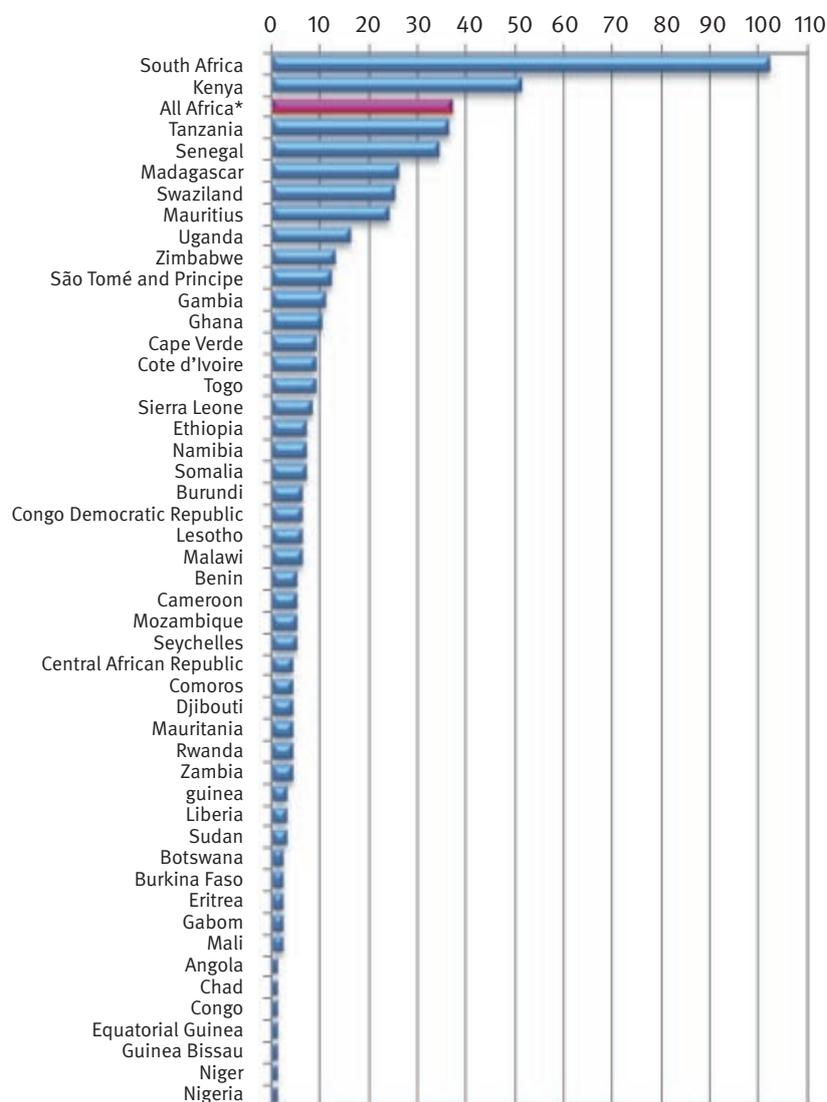
Waiting for economies to grow wealthier before they start to diversify their product base, as some authors suggest, may become an increasingly risky strategy under climate change. The opportunities and benefits for countries that do start to adapt their productive structures to climate change are increasing, alongside the opportunity costs of not doing so. There are advantages in being less developed: a country can adopt the most recent technologies at a low redundancy cost to existing technologies. And, in some ways, new climate change-related trade opportunities to diversify export markets and products may be less sensitive to overall levels of economic development.

But the importance of export diversification as a contributor to growth for most low-income countries is amplified as a result of limited scale economies in the domestic market, because of small economic as well as geographic size. The export profiles of LDCs are typically characterised by high degrees of concentration, with only a few tariff lines accounting for the bulk of exports. This profile makes them most vulnerable to demand-side volatility and other shocks, including climatic, which serves to underscore the importance of diversification as a means to reduce vulnerability to the physical impacts of climate change on current export baskets (Gueye et al., 2009).

Climate change may impose a direct growth constraint on soft commodity exporters because of increases in temperature and reductions in rainfall, unless productive structures can be made more resilient. Climatic shocks may become more frequent. Price movements for commodities may become more volatile with implications for macroeconomic management, in general. Even if the physical effects of climate change do not directly affect the production of current export baskets, other channels, such as changes in the supply and demand for different types of products and services, certainly will.

Existing mechanisms to help commodity exporters cope with adverse trade shocks include compensatory finance mechanisms. These mechanisms were designed to help commodity exporters that are highly dependent on one or a few commodities to adapt to shortfalls in their export earnings caused by terms of trade shocks. Because adverse shocks are likely to become more frequent because of climate change these mechanisms will need updating and enhancing (Hewitt, 2010). UNCTAD (2010) suggests the establishment of a counter-cyclical financing facility for low-income commodity dependent countries to deal with such external shocks in addition to the establishment of commodity price stabilisation schemes, including physical and virtual reserves, among others.

Figure 1: Number of products needed to account for at least 75% of exports



Despite 25 years of efforts to remove many of the policy barriers impeding export performance and inhibiting diversification, the composition of exports from sub-Saharan Africa (SSA) has not changed substantially. The continent as a whole remains the most dependent on primary commodity exports as a proportion of total exports in the world, and most countries depend on a very small number of goods. Figure 1 shows number of products that account for 75% of goods exports for each SSA country.

Note: *Including North Africa.
Source: Adapted from OECD (2008).

Figure 2: Export concentration indices

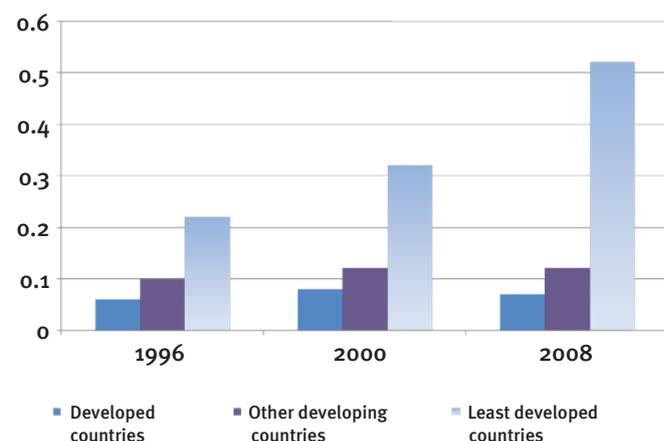


Figure 2 shows how the export concentration of LDCs is much higher than other developing countries, and has increased in recent years. Of all LDCs, oil exporters in SSA exhibit the highest export concentration, followed by other agricultural and mineral goods exporters (UNCTAD 2010).

Note: Measured by the Herfindahl-Hirschmann index.
Source: Adapted from UNCTAD (2010).

The WTO does not have specific provisions to deal with climate change, and the ongoing Doha negotiations do not address it. In this context, the continued lack of clarity on the structure of the UNFCCC regime post-2012 creates serious uncertainty as to the extent to which the rules of international trade will be aligned to such a regime. Lack of clarity at the multilateral level leaves too much scope for countries to resort to various unilateral trade measures, such as import restrictions, border tax adjustments, and production standards to address climate change (or its impacts). These measures might substantially reduce market opportunities for some types of producers and, therefore, constrain efforts to diversify exports across products and markets.

The commitment period of the Kyoto protocol, which began in 2008, will expire in 2012. The breakdown in negotiations for its second commitment period (2008 to 2012) in Copenhagen 2009 at the Fifteenth Session of the Conference of the Parties to the UNFCCC (COP15) meeting was the result of a desire by developed countries to create a new global agreement on climate change: the Copenhagen Accord. This was supported as an alternative to remaining within the framework already established by the UNFCCC under the Kyoto protocol. A new incremental approach to negotiations was adopted at the COP16 meeting in Cancun in 2010, but the final outcome from that meeting – the Cancun agreement – leaves options open.

The agreement is comprised of decisions undertaken under two tracks: the Kyoto protocol track and the working group on long-term cooperative action (LCA) track. These include decisions on finance, the adoption of land use-related measures to reduce emissions and extension of negotiations for the successor to the Kyoto accord by one year. It remains unclear how negotiations undertaken within each track will be reconciled. Unless substantial progress can be made towards the end of 2011, the appetite for negotiating the successor to the Kyoto protocol, and the UNFCCC process in general, may diminish. This could result in legal uncertainty because, although imperfect, the Kyoto protocol remains the only legally binding international commitment to reduce greenhouse gas emissions. This could pit supporters of the Kyoto protocol against those of the LCA.

Regulatory measures by countries that have adopted emissions limits to reduce GHG emissions from other countries not subject to binding reductions under the Kyoto protocol, and with no or low reduction targets, could include border adjustment measures (BAMs). These would target mainly imports of carbon-intensive products, such as paper, cement, rubber, glass, plastics and iron. Both the revised EU Emissions Trading Scheme (ETS) Directive and the

recent US Clean Energy and Security Act will require importers to participate in their emissions trading schemes and purchase emissions allowances according to the carbon content of products they supply to these markets.

Higher technical standards may require sophisticated and perhaps more costly production methods, effectively closing off markets for some exporters of low-cost, low-standard products. Some countries may resort to non-tariff measures in the form of additional technical standards related to the carbon and energy intensity of imported products, which could become barriers to the exports from others. However, new export product and market opportunities may arise if, for example, global carbon markets are underpinned by a new regulatory framework that includes emissions reductions from land-use practices and the conservation of forestry reserves.

Adapting existing strategies

Exploiting synergies between the trade and climate change regimes where they exist may help low-income countries overcome some of the physical effects of climate change likely to influence export diversification strategies in the future. Regulatory challenges to these strategies will also need to be addressed. Broadly defined, strategies will need to adapt in terms of:

- increasing the resilience and productivity of existing productive structures
- moving into new products and services related to global climate change mitigation efforts, and
- making full use of rights provided by the international trade regime.

Adapting in this way means that existing export diversification strategies may be strengthened, but will only be effective if a comprehensive growth and development strategy is in place. This section shows how potential synergies between the trade and climate change regimes could be exploited.

Increasing the resilience and productivity of existing productive structures

Existing productive structures will need to adapt to climate change. One way of doing so is to increase their resilience and productivity by diversifying within existing product categories. Adapting existing productive structures to expectations of the effects of climate change may include introducing new technologies, such as drought resistant crop strands.

One way to increase the available market opportunities, as well as value, for current export baskets could be to support trade in certified low carbon products. The UNFCCC has developed guidelines on how to

measure the carbon content of land, which suggests that further links could be made between the trade and climate change regimes. Some low-income and LDC producers have a strong comparative advantage in their use of carbon compared to counterparts in more temperate regions and these aspects are beginning to be marketed (e.g. Kenya's marketing of its products 'grown under the sun').

However, regulatory challenges to be overcome include technical barriers, such as how to measure the carbon content of products and carry out lifecycle analysis. Financial barriers for some types of producers include how to spread the fixed costs of certification over a given export basket. This suggests that the strengthening of marketing structures is a prerequisite to increasing the resilience, and productivity, of existing productive structures.

New and possibly higher value markets for existing products could include biofuels. The price advantages of biofuels production relative to importing fossil fuel are increasing rapidly. New markets for existing products, such as sugar cane, could include developed countries with mandatory renewable energy targets – so long as sustainability criteria can be met and verified – but also other regional and domestic markets. New biofuel technologies that permit land that is un-used or under-used to be cultivated may bring substantial trade opportunities for land-abundant developing countries. Linking biofuels production to carbon offset markets is one way to incentivise investment in low-income countries where demands for energy greatly exceed supply, and where the potential for growth in exports exists.

Diversifying into new export activities

If existing exports and by implication, sectors, are particularly vulnerable to the physical effects of climate change then one option is to intensify efforts to move into other activities that are not as vulnerable, e.g. from agriculture to some types of manufacturing or to services. However, it is important to note that some types of manufacturing, such as textiles and clothing production, are not only energy intensive but, in the case of high-value agricultural sectors such as horticulture, water-intensive. And there are risks of specialising in any activity, even one that seems sustainable.

The inclusion of a higher number of industrial sectors within emissions trading schemes in developed countries may trigger increases in FDI in low-income countries. This is because having to pay to pollute may increase the marginal incentives of investing and relocating production overseas to lower costs in general. Therefore, one policy option for low-income countries may be to offer proactive mitigation oppor-

tunities, for example, linked to carbon markets. These are less costly for investors, but effective enough to offset regulatory measures imposed by industrial countries to tackle carbon leakage. Proximity to oil exporters may provide additional locational advantages if high oil prices are sustained, and until low carbon energy supplies come on stream at cost. What these examples show is how new factors are likely to inform comparative advantages in the future and, as a result, routes towards export diversification.

Some new climate-related export opportunities might be less sensitive to the structural factors that can constrain diversification in general. Tapping into soil carbon markets through promoting good agricultural markets is one example. There have been suggestions that the EU is considering including the agricultural sector within its emissions trading scheme. However, it is not currently clear whether or not this market will be linked to the Clean Development Mechanism (CDM) and, therefore, the Kyoto Protocol. As a result there is uncertainty as to whether or not emissions reductions obtained from the agricultural sector in non-Annex 1 countries will be included.

One way to facilitate export diversification is to ensure that emissions reductions obtained from land-use changes are included within the next commitment period of Kyoto or its successor under the LCA, and that low-income countries and LDCs most vulnerable to the physical effects of climate change have access to these markets. This would represent a new source of income and be linked to a new market. It could represent a new type of trade preference and, at a minimum, ensure that principles of special and differential treatment (SDT) are maintained between the trade and climate change regimes.

New types of services will be demanded in the transition towards the low carbon economy. These include services related to the marketing of certified carbon emissions reductions (CERs). The experience of the CDM to date has shown that demand for associated services already outstrips the supply of related services (given the length of time it takes to get projects certified). Once farms, producers and firms are certified they typically need annual audits and the process of certification has its own lifecycle. Although carbon appears to be marketed as a good, similar to other types of commodities in general, trade in CERs is payment for a service, which means that different rules apply from those that regulate trade in goods.

Overcoming regulatory challenges

There are various channels through which Aid for Trade could help developing countries address institutional and supply-side capacity constraints and, therefore, both expand their trade opportunities and adapt to

new rules related to climate change mitigation policies. For example, Aid for Trade could be used to develop the institutional capacity necessary to benefit from mitigation initiatives, such as the CDM and Reducing Emissions from Deforestation and Forest Degradation (REDD) and also to make the investments necessary for their implementation (Keane et al., 2009).

Although there may be some potential synergies between the trade and climate change regimes, there is also a considerable degree of ambiguity in relation to the potential conflict areas. Carbon-related border adjustment measures (BAMs) on imports are likely to violate the WTO non-discrimination rules because they would discriminate between products based on where and how they are produced. Levying a carbon exports optimisation tax could be one tool developing countries could use to counter or pre-empt border adjustment measures imposed by developed countries. It could level the playing field between competing exports subject to no carbon regulation and domestic products subject to a carbon tax or inclusion within an emissions trading scheme.

If firms within emissions trading schemes, such as that of the EU, are allocated emissions permits for free this could violate WTO law because it is a type of subsidy. Concerns have already been raised in relation to the level of subsidies provided to the biofuels industry in the US and EU. The US has recently signalled its willingness to dispute Chinese subsidies to its nascent wind power industry.

Until there is a clear and predictable multilateral climate change framework and successor to the first Kyoto protocol, which expires next year, developing countries will need additional capacity and resource pooling in order to be ready to take dispute action on climate-change-related measures that affect their export interests. It is crucial that developing countries use the WTO dispute mechanism effectively to pursue their defensive and offensive trade interests.

Conclusion

- Policy-makers need to address governance issues, regulatory gaps, and potential clashes between the trade and climate change regimes. But they should also explore potential synergies.
- Low-income countries and LDCs most vulnerable to the physical effects of climate change may need assistance to tap into new trade opportunities related to global efforts to mitigate climate change. These opportunities include soil carbon markets and new climate-change-related services, such as REDD and others – as new factors are likely to shape comparative advantages in a carbon-constrained world.
- Principles of special and differential treatment should be maintained between the trade and climate change regimes. Developing countries should make full use of their rights at the WTO and UNFCCC.
- It is crucial that the post-Kyoto regime is designed to minimise potential areas of conflict with the multilateral rules of trade. It should provide legal certainty, stability and flexibility to accommodate the needs of its members so that they do not need to resort unilateral measures.

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