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Priority Sectors for Policy Intervention in South Africa

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CLIMATE CHANGE AND TRADE TO THE EU: PRIORITY SECTORS FOR POLICY INTERVENTION IN SOUTH AFRICA

Jason F Bell, Sumayya Goga and Nishal Robb

1. Introduction: Climate policies, trade and structural transformation

The deepening climate crisis has resulted in countries instituting a range of measures to curb emissions. The European Union (EU) has the most advanced climate policies, captured under the umbrella of its European Green Deal (EGD). While many of the measures being implemented impact countries within the EU, the measures are expected to impact Europe's trading partners. The impacts on trading partners is occurring through changing regulations and policies such as the Carbon Border Adjustment Mechanism (CBAM), shifting consumer preferences, and impacts through value chains as a result of changing competitiveness of end products.

EGD policies are forcing trading partners to the EU to adjust and decarbonise production processes, measure and report on emissions and other sustainability criteria, and, in some cases, even transform sectors to retain market share (the move towards electric vehicles). These policies include, among others, carbon taxes through the CBAM, the

move towards electric vehicles in order to curb emissions, and a range of measures within the food sector. Together, these policies bring significant changes in the global trading system and the functioning of value chains. The costs associated with adjusting to these policies are high. Furthermore, these costs need to be borne by developing countries over and above the adaptation costs.

The EU is one of South Africa's most important trading partners, and as a result, South Africa is at risk of having to bear the cost of mitigation, while also having to bear the cost of adaptation to increasingly difficult climatic conditions. This shifting of the costs of climate mitigation without proper consultation and assistance for developing economies' transition threatens an "unjust transition" and, if not properly and timeously addressed, can lock in an "unjust future" for South Africa.

As far as "unjust transitions" are concerned, policies that result in the loss of competitiveness in and access to critical export markets pose a threat to

The **African Industrial Policy in the 21st Century (AIP21)** network brings together scholars to share research results and outline a new research agenda in view of developing new thinking for a green and resilient industrial policy in Africa for the 21st century. The AIP21 Network organized a series of workshops on green industrialization in Africa at Copenhagen Business School (Denmark), University of Johannesburg (South Africa), and the African Center for Economic Transformation (Ghana), with co-funding from DANIDA's Knowledge in Action grant.

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existing productive capabilities and development prospects. Countries least responsible for environmental breakdown bear its most grievous costs. As far as “unjust futures” are concerned, the failure to implement policies that equip developing countries to keep up with green technological change and lay the foundation for future productive capabilities as manufacturers of green products and “environmental goods” will relegate these countries to a permanently subordinate position in a future, low-carbon global economy.

From a structural transformation perspective, South Africa’s export basket is under-diversified and policies that weaken countries’ access to export markets must be of grave concern. Hence, South Africa faces significant structural transformation risks from trade-related climate policies such as the EGD. This brief, based on our working paper on ‘Climate change policies and trade: Implications for industrial policy in South Africa’, explores these issues from a sectoral risk perspective. In this brief, we evaluate the sectors most in need of priority intervention to limit the impact of the EU’s EGD policies on South African exporters.

Overall, we argue that the push for decarbonisation should be linked to a broader project around structural transformation in South Africa, bolstered by the expansion of renewable energy production, the application of renewable energy to greening existing productive capabilities, and growing awareness of global shifts in consumer demand and what this means for future export opportunities. Full cognisance of the risks and vulnerabilities facing South African exporting sectors to the EU will highlight the areas of opportunity to link decarbonisation policies to industrial policies in supporting the emergence of new technologies and local production capabilities. Such capabilities, in turn, may provide the basis for reindustrialisation and a socially viable energy transition in South Africa.

2. EU Green Deal and related policies

The EU has recently launched its EGD as part of its overarching goal of achieving a net-zero emissions status by 2050. These EGD policies fall within the

EU’s broader “Fit for 55” initiative that provides a blueprint for the EU member states’ production to reduce their net carbon emissions by at least 55% by 2030, compared to their respective emissions in 1990. The “Fit for 55” targeted several areas such as climate, energy, transport, and taxation. The EGD thus represents a collective framework of wide-ranging sectoral policies and initiatives to make the EU “climate-neutral”.

While the vast majority of these EGD policies target domestic EU markets and producers, many of the EU’s trading partners are also likely to be affected by these green trade barriers. These trade barriers will take shape through the alterations of regulations governing carbon-emitting technologies precipitated by a growing shift in consumer preferences towards more ecologically-conscious and green production methods and products. At present, the most direct trade-related EGD policy that will have the most significant impact on trading partners, such as South Africa, is the CBAM.

The CBAM builds on the EU’s previously legislated Emissions Trading System (ETS) and is based on a system of certificates that encompass the embedded emissions in products being imported into the EU. The CBAM will impose an additional price on imported goods forcing exporters to the EU to pay the same carbon price as local EU producers. At this stage, all countries with export links to the EU are expected to be impacted by the CBAM with no exemptions.

Countries will, however, be afforded time to transition their production systems in preparation for the implementation of taxes like CBAM in the EU. For instance:

- The CBAM will only start from 2026 with a 3-year tax-free period between 2023 and 2026
- The carbon price will be ramped up progressively (in 10-percentage-point increments) over a period of 10 years from 2026
- Only a limited number of products will initially be covered under the CBAM, but

there is a possibility of other products being included at a later stage

- Only direct emissions linked to the production process of products will initially be covered, with indirect emissions linked to electricity consumption excluded initially.

Currently, the sectors in which CBAM may apply are those with high levels of carbon leakage and high carbon emissions. The initial scoping indicates that the following sectors are at immediate risk from the incoming CBAM tariff:

- Iron and steel
- Cement
- Fertiliser
- Aluminium

In its current form, the CBAM legislation only includes direct emissions (as part of a production process on which the producer has direct control, including heating and cooling). However, over time, indirect emissions (emissions from the production of electricity consumed in a particular production process) may feature an expansion of the CBAM's scope and an expansion in the number of products and sectors. This expansion of the scope of the CBAM is encapsulated in the cradle-to-grave approach (or full carbon footprint measurement).

Additionally, while the CBAM is considered the EU's flagship trade-related climate measure, several other sector- and product-specific EGD measures are likely to tax export producers further. These include other sectoral initiatives linked to the EU's climate mitigation agenda such as tighter emissions limits for cars and initiatives under the "Farm to Fork" (F2F) strategy. The EU's target of eliminating emissions from vehicles powered by internal combustion engines (petrol and diesel, ICE) is set to reduce demand for traditional modes of transport and accelerate the transition to electric vehicles (EV).

As part of its key priorities, the F2F lists as its key priorities the reduction of pesticide, fertiliser and antibiotics usage in farming, mitigation of nutrient loss, and increasing the proportion of agricultural

land used for organic production. The F2F Strategy is one outcome of the EU's new Common Agricultural Policy (CAP). Along with targets to tackle carbon emissions and leakages, the CAP seeks to ensure a fair income to farmers and increased competitiveness of European agricultural producers and processors. Overall, the F2F Strategy and CAP aim to reduce the environmental impact of the EU's food systems through measures to harmonise and expand eco-labelling requirements for food and agricultural products. It will impose costly traceability, transparency, and reporting requirements for developing economies.

3. The EGD and risks and vulnerabilities framework for South Africa: Priority sectors for intervention

The EU is a major trading partner for South African exports, with approximately 20% of exports destined for European markets. To understand sector-specific vulnerabilities, we developed a risks and vulnerabilities framework based on several indicators including the likelihood of adverse effects from EGD policies; the relative importance of EU exports to the South African economy (as measured by value and share of exports to the EU; employment in the sector); and the carbon intensity of South Africa's exports.

By evaluating the risks and vulnerabilities based on our indicators (Appendix 1), we categorised at risk export sectors that should be targeted for intervention. The priority sectors include basic metals and fabricated metal products, transport equipment, and agriculture and food processing. These sectors face significant immediate risks from the EU's EGD and associated climate mitigation policies. On the other hand, at this stage, several other non-priority sectors (mining and chemicals) are identified as potentially facing future risks given their dependence on the EU market and the potential for South Africa's currently exported products to be included in an expansion of the EU's CBAM and other green economy policies.

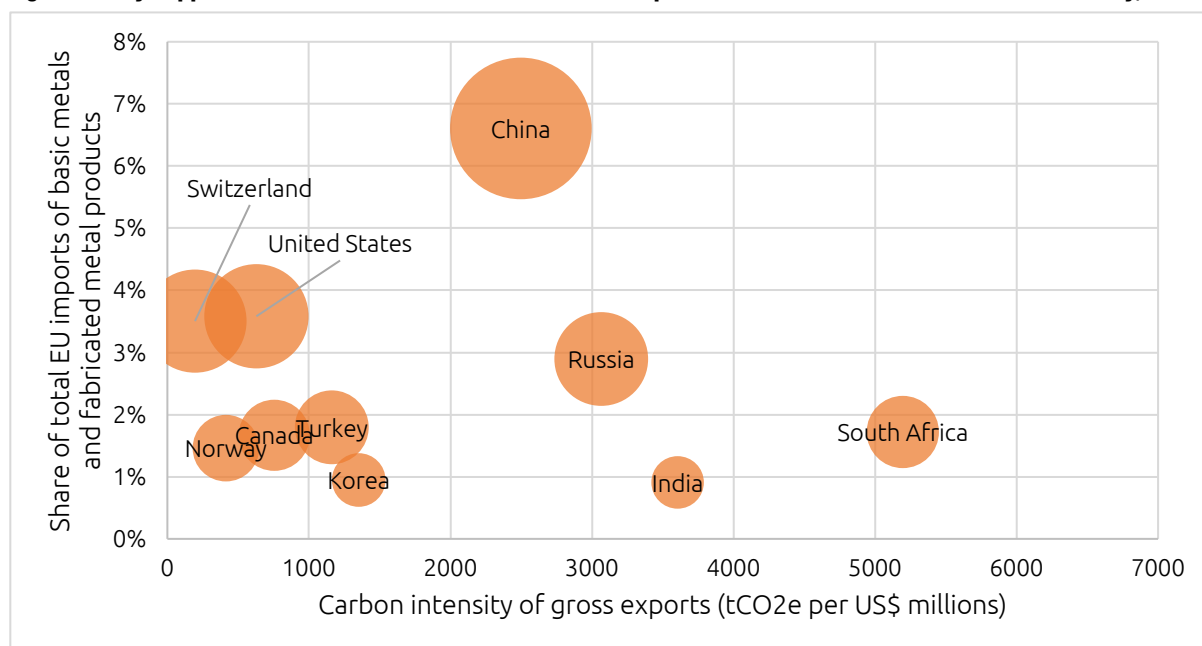
The discussion focuses on the priority sectors.

3.1. Basic metals and fabricated metal products

The basic metals and fabricated metal products sector comprises a set of key sub-sectors for South Africa in terms of employment, exports, and output receiving substantial support during the apartheid and democratic eras. The sector is highly carbon-intensive compared to other exporters to the EU (see Figure 1). The high carbon leakage stemming from the basic metals and fabricated metals

products sector is the primary reason for its inclusion in the CBAM. For this reason, the CBAM and the EU’s New Industrial Strategy (aiming to support the creation of markets for green metals through various demand-side measures) poses a significant immediate threat to South Africa’s exports of the products in this sector to the EU.

Figure 1: Key suppliers of basic metals and fabricated metal products to the EU (28) with carbon intensity, 2015



Source: Authors based on OECD data

Notes: Imports from EU countries are excluded. The carbon intensity of gross exports indicator shows the intensity of CO₂ emissions, tonne CO₂ per Million USD, in gross exports of exporting country *c* industry *i* to the importing partner country *p*. The emissions can come from any domestic or foreign industry upstream in the production chain.

As of 2021, the list of products to be included in the CBAM remains limited to products in the upstream of the value chain. This focus on upstream sectors offers South Africa some reprieve since most of the carbon intensity in, for instance aluminium, is indirect emissions. Over the longer term, the global transition away from ‘dirty’ metal and fabricated metal production towards greener methods of production and the potential for the EU to introduce the ‘cradle-to-grave’ measurement of carbon intensity for carbon border taxation in the future entails risks for South African producers

downstream from highly carbon-intensive sectors like basic iron, steel and aluminium.

The South African Steel and Metal Fabrication Master Plan 1.0 recognises the importance of transitioning the steel and metal fabrication to greener production methods by 2050. In addition, there is significant scope for decarbonisation of steel by scaling up the use of green hydrogen in production. A shift towards greener and renewable sources of energy and electricity will assist South Africa’s wider industrial renewal project, which could give established downstream machinery and

equipment sub-sectors such as mining equipment a competitive edge in the search for new markets globally and regionally.

3.2. Transport and automotive equipment

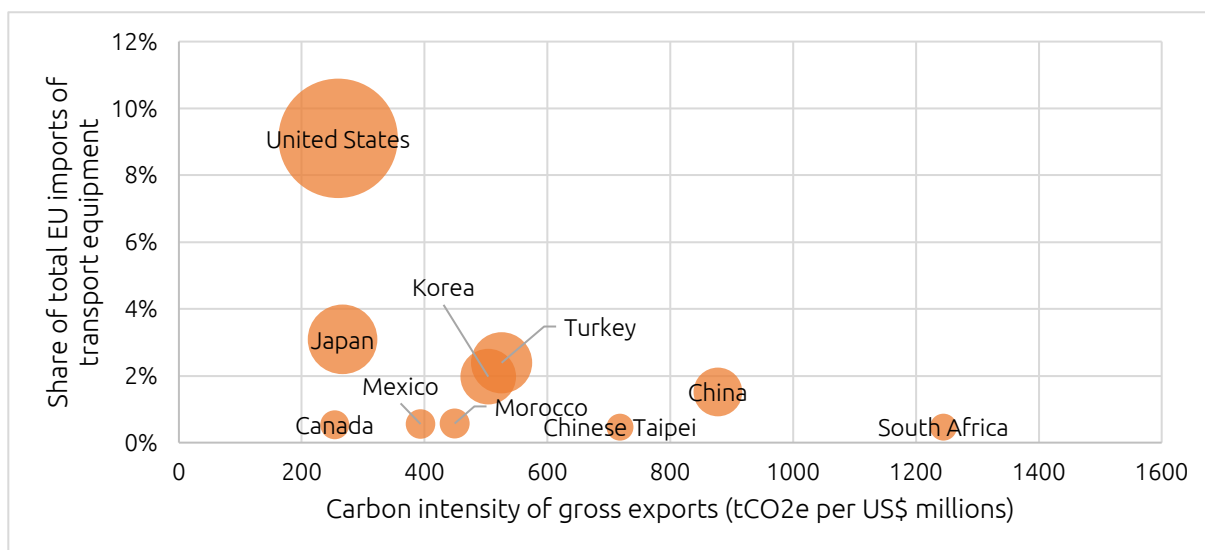
South Africa’s automotive sector is viewed as a crucial sector for the country’s wider industrial policy agenda. However, despite being the beneficiary of long-standing aggressive, and targeted state support since 1994, South Africa’s domestic automotive supply remains relatively underdeveloped compared to the global automotive sector. Moreover, this underdevelopment may be exacerbated by a global shift in consumer preferences towards electric vehicles. For example, South Africa’s automotive sector faces serious threats from the EU’s decision to phase out ICE-powered vehicles in favour of EVs.

The EU’s carbon emissions policies relating to transport and automotives is centred on three priority areas:

- i. moving towards zero-emission vehicles
- ii. increasing the efficiency of the transport system
- iii. speeding up the deployment of low-emission alternative energy for transport

This new policy focus puts South Africa’s automotive sector, which is one of the worst polluters relative to its share of total EU imports of transport equipment compared to other significant suppliers (Figure 2), at serious risk from a loss of competitiveness once these new barriers to trade are implemented

Figure 2: Key suppliers of transport equipment to the EU (28) with carbon intensity, 2015



Source: Authors based on OECD data

Notes: Imports from EU countries are excluded. The carbon intensity of gross exports indicator shows the intensity of CO₂ emissions, tonne CO₂ per Million USD, in gross exports of exporting country *c* industry *i* to the importing partner country *p*. The emissions can come from any domestic or foreign industry upstream in the production chain.

Furthermore, several South African manufactured transport equipment products (for example, catalytic converters) are at risk of completely becoming obsolete. Moreover, the South African automotive sector dynamics are complex due to the skewed and inverted nature of the value chain with multinational firms possessing an overwhelming

degree of economic power. This concentration of economic power allows these multinational firms to shape the development and technological direction of the local market. Considering these risks, South Africa must prioritise a shift towards a greener transport and automotive sector. This shift would necessitate both supply- and demand-side

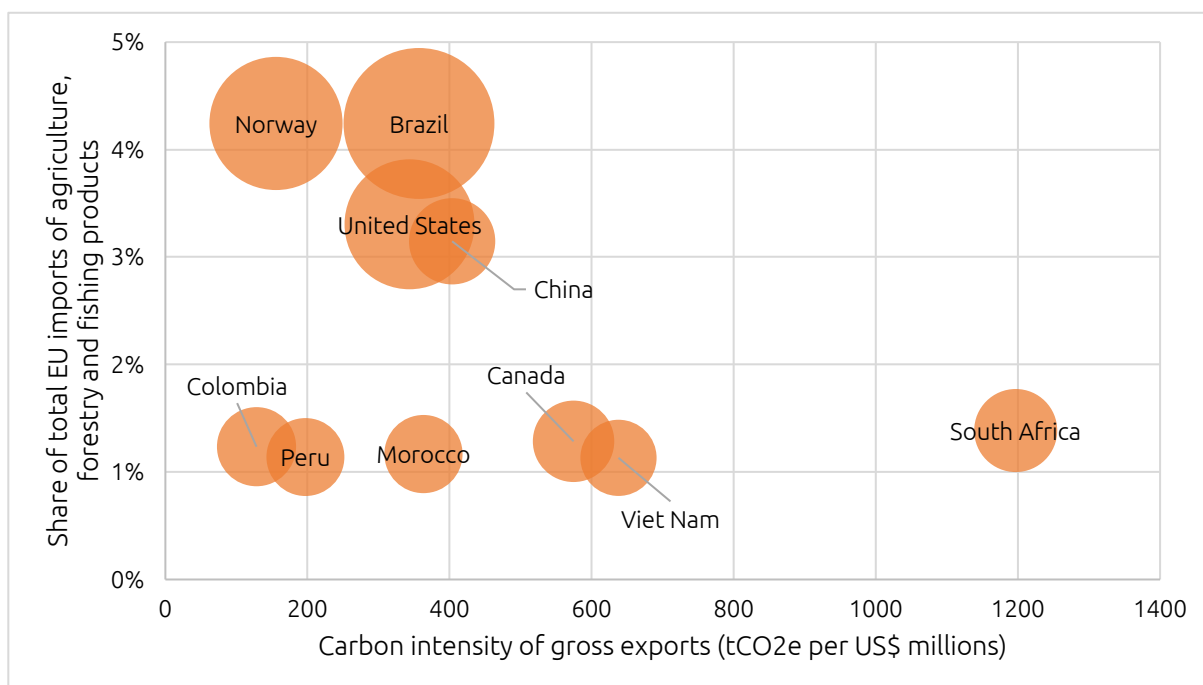
approaches to stimulate the relatively nascent EV and green transport markets in South Africa. Approaches to achieving this goal are already underway with both the dtic and Department of Transport offering strategies to assist South Africa’s transition toward creating an enabling green transport and automotive sector capable of meeting the demands of the EU’s “Fit for 55” Strategy.

3.3. Agriculture and food processing

Among South Africa’s top 50 exports were several products split between two intimately-linked sub-

sectors: Vegetable and fruit products and Prepared foodstuffs; beverages; spirits; tobacco. The EU is a crucial destination for South African produce within both crucial exporting sub-sectors. These products range from citrus fruit and grapes to wine, sugar, and fruit juice. The relatively high export value implies a significant degree of vulnerability for South African producers, given that South Africa’s carbon intensity of its agricultural and food processing sectors ranks much higher than the other crucial exporters to the EU (see Figures 3 &4).

Figure 3: Key suppliers of agriculture, forestry and fishing products to the EU (28) with carbon intensity, 2015



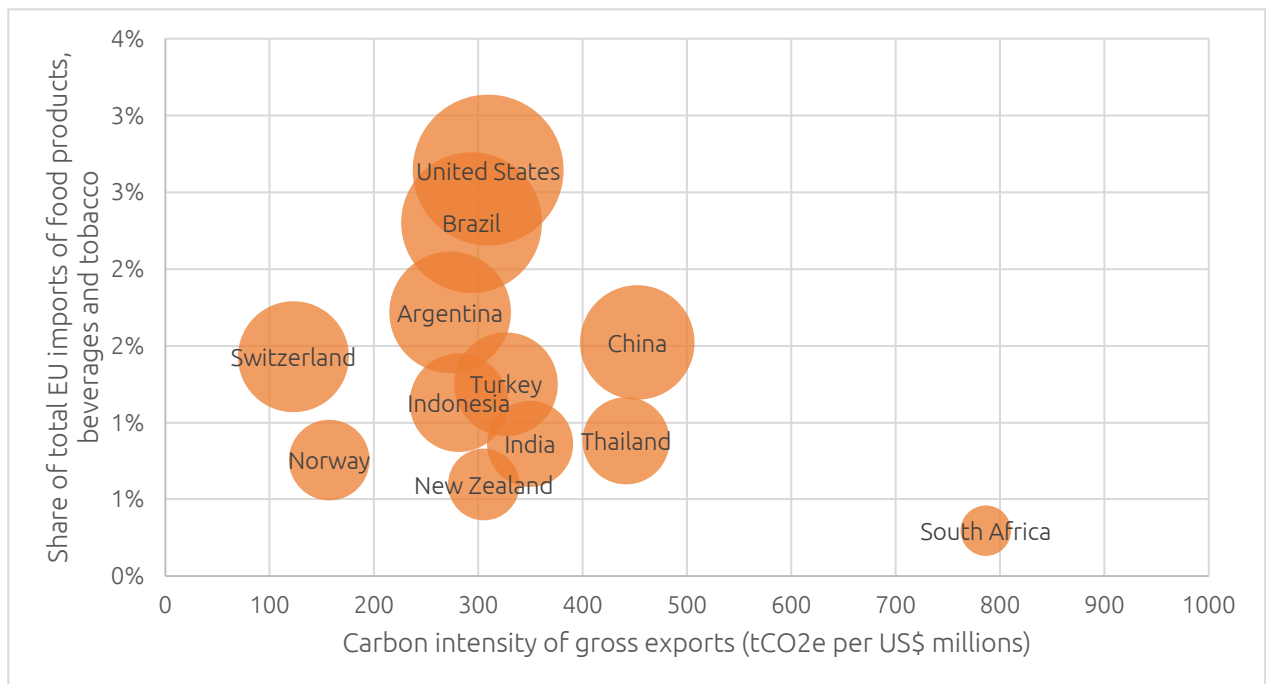
Source: Authors based on OECD data

Notes: Some countries (Ukraine and Côte d'Ivoire) were omitted from the top 10 because there was no carbon intensity data. Imports from EU countries are excluded. The carbon intensity of gross exports indicator shows the intensity of CO₂ emissions, tonne CO₂ per Million USD, in gross exports of exporting country c industry i to the importing partner country p. The emissions can come from any domestic or foreign industry upstream in the production chain.

While the food- and agriculture-related products discussed above do not fall under the initial scope of the envisioned CBAM, several other EU initiatives suggest that there is a need for South Africa to avoid complacency in reducing the carbon intensity of its production in these areas. Moreover, while carbon leakages may potentially become included as part of an expansion in the EU’s carbon taxes, another

concern for South Africa’s agriculture and food sectors is the use of pesticides in the production process not authorised by the European Food Safety Authority and concerns around the uncircular and wasteful nature of South Africa’s packaging sectors. These add to the vulnerability of these sectors’ future exports to the EU.

Figure 4: Key suppliers of food products, beverages and tobacco to the EU (28) with carbon intensity, 2015



Source: Authors based on OECD data

Notes: Imports from EU countries are excluded. South Africa did not make up the top 10 suppliers of this group of products. The carbon intensity of gross exports indicator shows the intensity of CO₂ emissions, tonne CO₂ per Million USD, in gross exports of exporting country *c* industry *i* to the importing partner country *p*. The emissions can come from any domestic or foreign industry upstream in the production chain.

South Africa will need to address mitigation, sustainability, and food safety issues through various innovations to best prepare its agricultural and food processing sectors. However, to ensure the efficacy of measures to de-risk the sector to the EU's EGD requires a renewed look into the barriers to entry into important demand markets such as the EU facing smaller farmers and processors. Addressing these barriers also requires acknowledging the globally concentrated food sector's role in furthering these barriers to entry through, for instance, private environmental standards that represent sustainability-driven supplier squeezes. The growing importance of measures like eco-labelling reinforces the power of large food businesses while squeezing smaller players and farmers in the value chain. More sustainable market outcomes must be pursued through policies that consider the power of large multinational food companies and advocate for broader participation by farmers and smaller

producers through a set of rules to reshape markets.

4. Conclusions

South Africa is in a challenging position as it is expected to both suffer directly from climate change in terms of shifting weather patterns impacting a number of sectors, but also indirectly through policies imposed by developed economies in the global North which will impact its product space and export baskets. This brief discussed a framework developed to assess the potential impacts of climate policies targeting decarbonisation on South Africa's trade and competitiveness with the EU. It sought to identify and understand the sectors that are most at risk to guide policymakers in the design and implementation of effective intervention policies.

This brief identified several priority sectors which are most vulnerable as a result of EGD policies. They

are: basic metals and fabricated metal products; transport equipment, automotive & auto parts and components; vegetable and fruit products; and prepared foodstuffs, beverages, spirits, and tobacco. Firstly, these sectors are at risk from immediate EU green policies and initiatives such as the CBAM, “Fit for 55”, and the F2F Strategy. Secondly, the EU is an essential market in terms of the share of SA exports to the EU in these sectors. Lastly, these sectors also display relatively high degrees of carbon intensity in their respective value chains.

At-risk sectors require priority- and joint intervention on the part of the government and the private sector to mitigate the negative impacts stemming from EU climate change policies. However, the high level of aggregation with which this paper views the various sector and industry risks associated with trade-related climate mitigation policies does not lend itself to formulating targeted industrial policy responses. For this reason, we acknowledge a need for greater depth of investigation into the specific value chains within priority sectors. Furthermore, while we have identified these three sectors as being particularly vulnerable, indications are that EGD policies including the CBAM will be extended to other products and that indirect emissions may at some point also be considered. Thus, given South Africa’s carbon-intensive energy sector, a number of other sectors may also be affected in the future.

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Ignorance of the sector and value chain specific dynamics in the face of significant trade and policy shocks given the EU’s shifting demand patterns and climate mitigation policies will lead South African industry down an unjust transition path towards an unjust future. Action must be taken to mitigate the current and coming impact of EU policies.

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Appendix 1: Summary table of SA's key export sectors and products to the EU; carbon intensity of sectors; and whether sector is affected by EGD policies

Sector	Sector employment (formal & informal)	Importance of EU market for SA	Growth in exports to EU (2011-2020)	SA carbon intensity (2015) [tCO ₂ e per US\$ Millions]	Key exports to the EU (export share; export value)	Affected by "green" policies/private standards?
Basic metals and fabricated metal products	97,794**	High export share (22.8%) High export value (R19.8bn)	4.4%	5196.3	Unwrought aluminium (36.9%; R6.18bn) Flat-rolled products of stainless steel (49.2%; R3.23bn) Plates, sheets and strip, of aluminium (41.3%; R2.11bn) Unwrought nickel (33.5%; R1.56bn) Ferro-alloys (14.9%; R6.56bn)	Yes, CBAM
Transport equipment, automotive & auto parts and components	123,403 ^Y	High export share (55%) High export value (R70.96bn)	19.2%	1244.7	Motor cars (61.6%; R46.34bn) Motor vehicles for good transport (48.6%; R21.96bn) Centrifuges (60.2%; R17.45bn) Parts and accessories for tractors (30.9%; R2.66bn)	Yes, Fit for 55; EV incentives
Vegetable and fruit products	263,053*	High export share (26.6%) High export value (R16.84bn)	14.4%	1196.8	Citrus (33.1%; R9.25bn) Grapes (47.6%; R5.02bn)	Yes, Farm to Fork strategy; new CAP
Prepared foodstuffs; beverages; spirits; tobacco	311,492 ^Y	High export share (28.5%) Low export value (R5.79bn)	7.6%	786.3	Wine (38.6%; R3.92bn) Fruit juices (26.7%; R1.09bn)	Yes, Farm to Fork strategy; new CAP
Mineral products	514,859 ^Δ	Low export share (12.4%) High export value (R38.09bn)	4%	1140.4	Precious-metal ores and concentrates (95.1%; R14.86bn) Titanium ores and concentrates (30.7%; R2.43bn) Niobium, tantalum, vanadium or zirconium ores and concentrates (30.5%; R2.01bn)	No, but potential candidates for future CBAM scope expansion
Pearls, precious stones, precious metals		Low export share (11.7%) High export value (R37.89bn)	14.6%	1140.5	Diamonds (30.1%; R6.74bn) Coin (93.2%; R10.01bn) Waste and scrap of precious metals (90.9%; R4.52bn)	No, but potential candidates for future CBAM scope expansion
Products of chemicals and allied industries	169,798***	High export share (34%) High export value (R15.73bn)	25.7%	1287.7	Reaction initiators (60.4%; R6.54bn) Acyclic hydrocarbons (21%; R1.41bn) Sulphates (92.4%; R4.99bn)	No, but potential candidates for future CBAM scope expansion Chemicals Strategy
Pulp of wood, paper	93,658****	Low export share (7.1%) Low export value (R0.79bn)	2.6%	902	Chemical wood pulp (7.1%; R0.79bn)	No, but potential candidates for future CBAM scope expansion

Source: Authors

Notes: * Fruit SA Statistics 2019 (<https://fruitsa.co.za/wp-content/uploads/2020/10/FRUIT-SA-STATS-2019.pdf>), ** WOW Manufacture and Wholesale of Basic Iron and Steel 2019, *** CHIETA Annual Report 2019/2020, **** Quantec EasyData (Sum of Wood and wood products and Paper and paper products), ^Δ Mining employment (<http://www.statssa.gov.za/?p=14682>), ^Y Quantec EasyData (2020)